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Quarterly Ground Water Sampling Event Summer 2001

Sullivan's Ledge Superfund Site New Bedford, Massachusetts

December 2001





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REPORT

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Sullivan's Ledge Superfund Site New Bedford, Massachusetts

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1. Introduction

1.1. Purpose and objective

Consistent with the schedule established in O'Brien & Gere's letter to USEPA dated June 26, 2000, the Summer 2001 round of ground water monitoring was conducted at Operable Unit 1 of the Sullivan's Ledge Superfund Site from June 13, 2001 to June 22, 2001 and on August 9, 2001. Assisting O'Brien & Gere Engineers, Inc. (O'Brien & Gere) with this program were Mabbett & Associates, Inc. (M&A) and Alpha Analytical Labs (Alpha). M&A provided field sampling services and related consultation while Alpha provided analytical services. Sampling was conducted in accordance with the Final Field Sampling Plan (FSP) submitted to Metcalf & Eddy (M&E) in January 2000, as amended by M&A letters dated March 14 and March 16, 2001 and a USEPA letter dated June 22, 2001. The M&A letters and the USEPA letter are included in Appendix A.

1.2. Deviations from field sampling plan (FSP)

The following deviations from the FSP were made during the Summer 2001 sampling event:

- Based on an O'Brien & Gere request dated May 18, 2001, groundwater samples were not analyzed for semi-volatile organic compounds (SVOCs), as confirmed in a USEPA letter to O'Brien & Gere dated June 22, 2001. These letters are included in Appendix A. Groundwater samples were analyzed for volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), and TAL metals.
- As discussed with USEPA on July 10, 11, and 12, 2001, PCB samples were not analyzed from monitoring wells MW-4, MW-4A, MW-5, MW-5A, MW-6, MW-6A, MW-13, MW-13A, MW-10, MW-10A, MW-10B, MW-17, MW-22A, and ECJ-2(187'). Further information concerning this deviation from the FSP is presented in an M&A letter to USEPA dated July 20, 2001.
- Monitoring well MW-12 was not sampled due to the relatively high location of the bladder pump in the well. The well is apparently not plumb, and it has not been possible to either push the bladder pump deeper into the well or to remove it.
- During the Summer 2001 sampling event, the sampling ports in Westbay monitoring well ECJ-3 located at 158, 248, and 283 feet

below the top of casing were not sampled due to the presence of a coil of rope observed at 160 feet below the top of casing. The sampling port located at 158 feet below the top of casing was not sampled due to the proximity of the coil of rope in the well and the approximate 10 foot length of the Westbay sample bottles required to collect a sample. It should be noted that HLA indicated on July 18, 2001 that a segment of the coil of rope had been removed and well ECJ-3 was cleared to a depth of 220 feet, enabling the future sampling of four ECJ-3 ports (i.e., 63', 103', 138', and 158'). Further information concerning the status of the lower ports of ECJ-3 was presented in a letter from the PMC to USEPA dated November 1, 2001, which is included in Appendix A.

- Monitoring wells MW-10AR and MW-17 were sampled with precleaned disposable bailers. Although the riser on MW-10AR was replaced during construction, attempts to re-install a low-flow pump have been un-successful due to an apparent obstruction. Likewise, due to the periodic presence of oil in MW-17, and the use of absorbent socks during the Summer of 2000, a low-flow pump has not been re-installed in MW-17. Prior to sample collection, three well volumes of ground water were bailed from each of these wells.
- Low-flow sampling wells exhibiting turbidity levels above the desired 5 NTU were purged for approximately 60 minutes, generally allowing stabilization of all other indicator field parameters, prior to the collection of samples. Past experience with these wells indicated that longer purge times would not reduce the turbidity to 5 NTU.

 This applied to eight of twenty low-flow wells sampled (MW-2, NW-8, MW-8A, MW-10, MW-10B, MW-13A, MW-22A and MW-24).
- Low-flow wells MW-12AR, MW-14, and GCA-1, which were sampled on June 14, 2001, exhibited unusually high turbidity readings on the turbidity meter. These unusually high readings were believed to be due to high humidity causing condensation on the turbidity sample vials. Historic sampling records did not indicate elevated turbidity readings at these wells, and samples were collected once all other field parameters stabilized following approximately 30-45 minutes of purging.
- Consistent with previous sampling events, the quantity of water sampled from each Westbay well sampling port was decreased by one liter to streamline the sampling process. One liter of ground water was submitted to the laboratory for PCB analyses.

It should also be noted that MW-8, MW-8A, and ECJ-4 were not sampled in June 2001 concurrent with the other wells because of access issues due to their location on a golf course fairway. On August 9, 2001, the golf course management company relocated the tee for the 6th fairway and the samples were collected. Arrangements have been made with the golf course management to coordinate sampling in the future so that these wells can be sampled concurrent with other monitoring wells.

2. Summary of field activities

2.1. Well locations

The location of overburden, shallow bedrock, intermediate bedrock, and deep bedrock monitoring wells and Westbay ports are shown on Figures 1, 2, 3, and 4, respectively.

2.2. Quantitative well integrity testing

In accordance with Section 2.3 of the FSP, M&A conducted a series of qualitative well integrity tests in February and March 2001. The purpose of the qualitative well integrity testing was to identify monitoring wells which would require repair prior to monitoring. A letter by M&A dated March 19, 2001 documented the results of the initial well integrity inspections and was included in the Spring 2001 Ground Water Monitoring Report. During the Summer 2001 round, M&A observed individual wells prior to sample collection, and noted no changes since the Spring 2001 groundwater sampling event.

2.3. Water levels

Water levels were collected from June 12 to 13, 2001, prior to initiation of sample collection. A letter by M&A dated June 29, 2001 reporting the measured depths to ground water is included in Appendix B. It should be noted that the confirmatory survey of the top of casing elevations discussed in the Spring 2001 Groundwater Monitoring Report was completed on August 10, 2001. An M&A letter dated December 6, 2001, presenting revised groundwater elevations for the conventional wells, based on the updated survey data, is also included in Appendix A. Ground water contour maps are included as Figures 5 through 8.

2.4. Conventional ground water monitoring wells

Following completion of the qualitative well integrity testing, a total of twenty conventional ground water monitoring wells were identified, characterized, and sampled in accordance with the FSP and the QAPP through the use of an EPA-approved low-flow bladder pump system dedicated to each well. Additionally, two wells (MW-10AR, MW-17) were sampled using bailers as described in Section 1.2. It should be noted that oil was not observed in MW-17 during the sampling.

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Prior to sampling, purged ground water was characterized and tested in a flow-through cell on-site for the parameters described in Section 2.5 of the FSP. Equipment used to perform the characterization was calibrated and used in accordance with the standards and protocols provided in Section 3.6 of the QAPP.

Following characterization, sampling of the conventional wells was completed using procedures described in Section 2.6 of the FSP. Sampling logs are provided in Appendix C of this report.

Samples were packed on ice and sent to Alpha Analytical Labs under a chain-of-custody (COC) for VOCs, PCBs, and TAL metals analyses by methods described in Section 2.1 of the FSP and as amended by the M&A letter dated March 14, 2001 and the USEPA letter dated June 22, 2001, included in Appendix A. Temperature and trip blanks were shipped with coolers submitted to the laboratory in accordance with Section 3.5 of the QAPP.

Quality Assurance/Quality Control (QA/QC) samples were also collected in accordance with Section 3.5 of the QAPP, including three duplicate samples, two matrix spike (MS) samples, and two matrix spike duplicate (MSD) samples. Duplicate sample #1 was collected on June 19, 2001 from MW-6. Duplicate sample #2 was collected from MW-6A. A duplicate sample was also collected from MW-8 on August 9, 2001. MS/MSD samples were collected at MW-10B and MW-8A.

2.5. Westbay monitoring wells

Four Westbay bedrock wells (ECJ-1, ECJ-2, ECJ-3 and ECJ-4) were sampled during the Summer 2001 ground water sampling event. Westbay field sampling logs are provided in Appendix D.

Consistent with Section 2.6 of the FSP, ground water from the Westbay ports was directly sampled without prior characterization. Samples collected from the Westbay bedrock wells were packed on ice and shipped under a COC to Alpha Analytical Labs for VOCs, PCBs, and TAL metals analyses in accordance with the procedures outlined in Section 2.1 of the FSP, as amended by the M&A letter dated March 14, 2001 and the USEPA letter dated June 22, 2001, included in Appendix A. Temperature and trip blanks were shipped with coolers submitted to the laboratory in accordance with Section 3.5 of the OAPP.

QA/QC samples from the Westbay sampling were also collected, including two duplicate samples and one MS/MSD sample. Duplicate sample #3 was collected from ECJ-2 (47') and duplicate sample #4 was collected from ECJ-1 (37'). The MS/MSD samples were collected from ECJ-3 (51').

2.6. Validated results

Validated data from the sampling round is included in the data validation report provided in Appendix E. The data has been downloaded into a Microsoft FoxPro relational database management system (DBMS) to facilitate future data management and trend analysis.

2.7. Qualitative comparison to historical data

Tables 1 through 3 present the range of detected constituents in the groundwater monitoring wells for VOCs, PCBs, and TAL metals, respectively. A review of the tables suggests the following:

- Consistent with previous investigations, the following VOC constituents were detected most frequently: trichloroethene, 1,2 dichloroethene, vinyl chloride, chlorobenzene, benzene, toluene, ethylbenzene and xylene.
- Consistent with previous investigations, PCBs were detected infrequently during the Summer 2001 sampling event.
- The following metals were not detected in any of the 42 groundwater samples: antimony, beryllium, cadmium, mercury, selenium, silver, and thallium. The following metals were detected in fewer than 10% of the samples: arsenic, chromium, cobalt, lead, and nickel. Only aluminum, barium, calcium, copper, iron, magnesium, manganese, potassium, sodium, vanadium, and zinc were detected in more than 10% of the samples.

Tables 4 and 5 present historical VOC and PCB groundwater data from certain wells which span the remedial investigations, pre-design investigations, design investigations, and post-construction investigations. Review of these tables suggests that the concentrations of constituents in the identified wells for the Summer 2001 sampling event were generally similar to or lower than concentrations observed during previous sampling events.

A summary of groundwater monitoring data for VOCs and PCBs from the Summer 2001 Round is presented on Table 6. For comparative purposes, the results from the Winter 1999 round and Spring 2001 round are also presented. Although the results of the three rounds are generally consistent, some observations of the data are as follows:

- In the Set A wells, the concentrations of total VOCs detected during Spring and Summer 2001 tended to be lower than those detected during Winter 1999, with the exception of one bedrock well.
- In the Set B wells, the concentrations of total VOCs detected have been generally consistent over time, with some variability being observed in individual wells.

- In the Set C wells, the concentrations of total VOCs detected during the three sampling events tended to be consistent.
- In the Set D wells, the concentrations of total VOCs detected were consistent between the three events, and were low.
- During Summer 2001, PCBs were detected in only 3 of 16 on-site wells, and 0 of 12 off-site wells.

3. Summary, conclusions, and recommendations

3.1. Summary

A total of twenty-two conventional wells and twenty ports from four Westbay wells were sampled during the Summer 2001 groundwater sampling event. Analysis was conducted for VOCs (42 samples), PCBs (28 samples), and TAL metals (42 samples). Analytical results were validated and downloaded into a Microsoft FoxPro relational database management system to facilitate future data management and trend analysis.

3.2 Conclusions

Some conclusions which can be drawn based on the Summer 2001 data are as follows:

VOCs

The number of specific VOC constituents present appears to be limited. A review of Table 1 indicates that only eight constituents were detected in more than 10% of the samples: trichloroethene, 1,2-dichloroethene, vinyl chloride, chlorobenzene, benzene, toluene, ethyl benzene, and xylene.

As discussed in the Spring 2001 Groundwater Sampling Report, VOCs continue to be a broad indication of groundwater contamination, and based on mobility, continue to be a good indicator of potential changes in off-site migration patterns. A review of Table 6 confirms that at no well during either sampling event were PCBs detected without the codetection of VOCs.

PCBs

A review of Table 2 confirms that PCBs continue to be detected infrequently and in low concentrations. As indicated in Section 2, PCBs were detected in only 3 of 16 on-site wells, and 0 of 12 off-site wells.

Metals

A comprehensive list of TAL metals were analyzed in Summer 2001, and only 11 of 23 metals were detected in more than 10% of the samples. As shown on Table 3, the metals detected in more than 10% of samples were as follows: aluminum, barium, calcium, copper, iron, magnesium, manganese, potassium, sodium, vanadium, and zinc.

3.3 Recommendations

The Summer 2001 data support the recommendation made in the Spring 2001 Groundwater Sampling Report that the results of future monitoring events continue to be evaluated with the intent of identifying potential trends in the data and of focusing the scope of future monitoring events.

Table 1
Suillivan's Ledge Superfund Site
Groundwater Data Summary
Summer 2001 Monitoring Event
Volatile Organic Compounds¹

Constituent	Number of Samples	Number of Detects	Range	e (µg/L)
		!	Low	High
Benzene, 1,2,4-trimethyl	42	3	2.5U	35
Benzene 1,3,5-trimethyl	42	1	2.5U	19
1,3-Dichlorobenzene	42	1	2.5U	3
1,4-Dichlorobenzene	42	2	2.5U	12
4-Methyl-2-pentanone	42		5U	920
Acetone	42		5U	
Acrylonitrile	42	1 .	5U	13
Benzene	42	12	0.5U	12
Chlorobenzene	42	17	0.5U	2400
Chloroform	42	2	0.75U	180
Ethylbenzene	42	15	0.75U	1 1
Isopropylbenzene	42	3	0.5U	4100 15
Methyl tert butyl ether	42	4	1U	
Naphthalene	42	3	2.5U	3.6
Styrene	42	2	0.5U	40
Tetrahydrofuran	42	1 .		1.6
Toluene	42	12	10U	14
Trichloroethene	42	10	0.75U	3900
Vinyl chloride	42	20	0.5U	710
cis-1,2-Dichloroethene	42	23	1U 0.5U	22000
n-Butylbenzene	42	23	0.5U	88000
n-Propylbenzene	42	3		2.5
0-Xylene	42	4	0.5U 0.5U	4.5
o-Isopropyltoluene	42		0.5U	4.5
n,p-Xylenes	42	5	0.5U	3.3
sec-Butylbenzene	42	2	0.5U	28
rans-1,2-Dichloroethene	42	9	0.5U 0.75U	1.5 2100

Notes

^{1.} A total of 74 volatile organic compounds analyzed for using method 8260B. Only detected compounds shown.

Table 2 Sullivan's Ledge Superfund Site Groundwater Data Summary Summer 2001 Monitoring Event PCBs¹

Constituent	Number of Samples	Number of Detects	Range (µg/L)		
•		·	Low	High	
Aroclor 1242/1016	28	. 2	0.4U	5.9	
Arocior 1254	28	1	0.40	2.08 J	

Notes

^{1.} A total of 6 PCB compounds analyzed using method 8082B. Only detected compounds shown.

Table 3 Sullivan's Ledge Superfund Site Groundwater Data Summary Summer 2001 Monitoring Event Metals¹

Constituent	Number of Samples	Number of Detects	Rang	e (µg/L)
			Low	High
Aluminum	42	14	1000	10,000
Antimony	42	0	50U	50U
Arsenic	42		5U	
Barium	42	36	100	23
Beryllium	42		5U	1,500
Cadmium	42		5U	5U
Calcium	42	42	22.000	5U
Chromium (total)	42	3	10U	170,000
Cobalt	42		200	60J
Copper	42	5	100	150 70
ron	42	40		
ead	42	3	50∪ 5U	110,000
Magnesium	42	42	3,200	104
Manganese	42	39	10U	54,000
Mercury	42	0	0.5U	9,100
Nickel	42	2	25U	0.5U 961
Potassium	42	39	1,000U	
Selenium	42	0	5U	13,000
Gilver	42	0	7U	5U
Sodium	42	42	14,000	70
hallium	42	0	5U	220,000
/anadium	42	5		5U
linc	42	8	10U 50U	7,700

Notes:

^{1.} A total of 23 metals analyzed using method 6010B/7470A. All analytes shown.

TABLE 4

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A
DEPTH								"""	1000-220	1 10104-224	WW-ZZA
COMPOUND	5 FEB 86	18 MAR 86	24 FEB 88	23 AUG 92	2 DEC 92	11 FEB 93	28 APR 93	21 MAR 95	17 NOV 99	27 MAR 01	18 JUNE 01
1,1,1-Trichloroethane	T.	Ū	i	25 U	25 U	50 U			12 U		
1,1,2,2-Tetrachloroethane) u	ا ا (ا	! (J 25 U	25 U						
1.1.2-Trichloroethane	j u	rl u	Ι ι	J 25 U	25 U						
1,1-Dichloroethane	u	J U	lι	J 25 U	25 U					7.5 U	
1.1-Dichloroethene	l u	ı ∪	lι	J 25 Ū	25 U				12 0	7.5 U	
1,2-Dichloroethane	U	ı u	lι	J 25 U			50 U		12 0		
1,2-Dichloroethene (total)	2300	1200	84	16 J	25 U		3,500	50 U	12 U 24 U	5.0 U	
1,2-Dichloropropane	l · u	ı! u	Ι	J 25 U	25 U		50 U		12 U		3.8 U
2-Butanone	U	ıl u	! [25 U	25 U	50 U	50 U	50 U	250 U	18 U	
2-Hexanone	Ι. υ	ıl u	li	25 U	25 U	50 U	50 U			50 U	
4-Methyl-2-Pentanone	Ιυ	ن ار	l i	25 U	25 U	50 U	50 U		120 U	50 U	
Acetone	l u	ن ا	l · ŭ		25 U	50 U	50 U		120 U		25 U
Benzene	120	160	87	190	160	200	230	200	250 U 670		25 UJ
Bromodichloromethane	Ιυ	U			25 U	50 U	50 U			120	26
Bromoform	- l - ū	ıl ü	Ĭ	25 U	25 U	50 U	50 U		12 U	5.0 U	2.5 U
Bromomethane	l ū	Ū	ŭ	25 U	25 U	50 U	50 U		12 U	5.0 U	2.5 U
Carbon Disulfide	l u	ا ا	Ŭ	25 U	25 U	50 U	50 U		25 U	10 UJ	5 U
Carbon Tetrachloride	Ιυ	l ū	ŭ	. 25 U	25 U		50 U	50 U	12 U	50 U	25 U
Chlorobenzene	140	230	340	460	390	430	410	730	12 U	5.0 U	2.5 U
Chloroethane	lυ	U	11		25 U	50 U	50 U	730 50 U	42	140	5.1
Chloroform	Ū	l ŭ.	ŭ	25 U	25 U	50 U	50 U	50 U	25 U	10 UJ	5 U
Chloromethane	l ú	l ü	ŭ	25 U	25 U	50 U	50 U		12 U	7.5 U	3.8 U
cis-1,3-Dichloropropene	Ιú	l u	Ŭ	25 U	25 U	50 U	50 U		25 UJ	50 U	12 U
Dibromochloromethane	l u	l ú	Ū		25 U	50 U	50 U		12 U 12 U	5.0 U	2.5 U
Ethylbezene	3600	3500	3200	310	330	300	140	59	190	5.0 U	2.5 ∪
Methylene Chloride	81 J	U	U		25 U	50 U	50 U	50 บ	190 50 U	11	2.9
Styrene	U	l ul	ū	1 1	25 U	50 U	50 U	50 U	12 U	25 U	25 U
Tetrachloroethene	lυ	l ul	Ū	25 U	25 U	50 U	50 U	50 U	12 0	5.0 U	2.5 U
Toluene	93 J	42 J	8	25 U	4 J	50 U	50 U	50 U	240	5.0 U	2.5 U
trans-1,3-Dichloropropene	U	U	Ū	- 1	25 U	50 U	50 U	50 U		98	7.3
Trichloroethene	l ŭ	ľ	Ü		25 U	50 U	50 U	50 U	12 U	5.0 U	2.5 U
Vinyl Chloride	1800	360	190	23 J	14 J	50 U	50 U	50 U	12 U	5.0 U	2.5 U
Xylene (total)	U	U	32	27	25	30 1	30 J	23 J	25 U 640	10 UJ 35	5 U
Units: ug/L		<u> </u>					201	Z3 J	040		32.5
U ≃ non-detected											i

U = non-detected

J = estimated

TABLE 4

SULLIVAN'S LEDGE SUPERFUND.SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

17 JAN 85 13 MAR 86 25 FEB 88 21 AUG 92 18 NOV 92 12 FEB 93 28 APR 93 22 MAR 95 17 NOV 99 23 MAR 01 18 JU	0.5 U 0.5 U 0.75 U
1.1.1-Trichloroethane	0.5 U 0.5 U 0.75 U
1.1.1-Trichloroethane	0.5 U 0.5 U 0.75 U
1.1.2.2-Tetrachloroethane	0.5 U 0.75 U
1,1,2-Trichloroethane	0.75 U
1.1-Dichloroethane	
1.1-Dichloroethene	
1,2-Dichloroethane	0.75 U
1.2-Dichloroethene (total)	0.5 U
1,2-Dichloropropane	0.5 U
2-Butanone	0.8
2-Hexanone	1.8 U
A-Methyl-2-Pentanone 380	5 UJ
Acetone	5 UJ
Benzene	5 U
Bromodichloromethane	5 UJ
Bromoform	0.5 U
Bromomethane	0.5 U
Carbon Disulfide	0 5 U
Carbon Tetrachloride	1 U
Chlorobenzene	5 U
Chloroethane U U U 10	0.5 U
1 0 0 0 00 100 100 100 100 100 100 100	.59
Chloroform 80 11 11 11 11 10 10 10 10 10 10 10 10 10	1 0
Chloromethane 1 1 1 0 0.55 U 0.75 U	0.75 U
cis-1 3-Dichloropropene	2.5 U
Dibromochloromethane	0.5 U
Fthylbezene	0.5 U
Methylene Chloride 470 0.50 U 0.50 U 0.50 U	0.5 U
Styrene 1 10 10 100 100 100 2.0 0 2.5 0	5 U
Tetrachlorgethene 10 0 10 10 10 10 10 10 10 10 10 10 10 1	0.5 U
Toluene	0.5 U
trans-1-3-Dichloropropene	0.75 U
Trichloroethene 11 44 11 10 10 10 10 10 10 10 0.50 U 0.50 U	0.5 U
Vinyl Chloride 1 0 5 1 0.17 J 0.5 U	05U
Xylene (total)	.4
Ayterie (10tar)	0.5 U
U = non-detected	
J = estimated	-

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A		(·
DEPTH						10100 071		· WIVY-OA	WW-OA	WWW-OA	MVV-6A	MW-6A	MW-6A	MW-6A
COMPOUND	17 JAN 85	17 JAN 85	21 MAY 85	12 MAR 86	24 FEB 88	24 FEB 88	27 AUG 92	17 NOV 92	17 FEB 93	29 APR 93	24 MAR 95	16 NOV 99	20 MAR 01	10 11115 04
1.1.1-Trichloroethane	U	U	U	U	U	11	10 U	10 U	10 UJ		290	0 50 U		
1.1,2:2-Tetrachloroethane	lυ	' U	Ū	ũ	ŭ	· ŭ		10 U	10 UJ	20 U	290 50 U	0.50 U		
1,1,2-Trichloroethane	l u	U	Ü	Ū	Ŭ	Ĭ	10 U	10 U	10 UJ	20 U	50 U		2.5 U	
1.1-Dichloroethane	l u	Ū	Ŭ	Ŭ	l ii	ii	10 U	10 0	- 10 UJ	20 U	50 U	0.50 U		
1.1-Dichloroethene	lυ	U	Ü	i ii	11	ü	10 0	10 U	10 UJ	20 U	50 U	0.96 4.3	3.8 U	1.5 U
1.2-Dichloroethane	lυ	U	Ū	Ŭ	ŭ	ŭ	5 J	10 U	10 UJ	20 U			3.8 U	10
1.2-Dichloroethene (total)	320	360	26	15	490	470	85	98	270 J	260	50 U	0.50 U		
1.2-Dichloropropane	l u	υ	u		11	4,0	10 U	10 U	10 UJ	26U 20 U	730 50 U	1216	180 J	59
2-Butanone	ไ ข	Ū	ŭ	ŭ	ŭ	34 J	10 U	10 U	10 UJ	20 U		0 50 U		3.5 U
2-Hexanone	ĺ	ľůl	ŭl	ŭ	ŭ	54 J	10 U	10 U	10 UJ	20 U	50 U 50 U	10 U		10 U
4-Methyl-2-Pentanone	l u	430	ŭ	ŭ	ŭ	ŭ	10 U	10 U	10 UJ	20 U		5.0 U		10 U
Acetone	U	U.	ŭl	ŭ	ŭ	ŭ	10 U	100	10 UJ	20 U	50 U	5.0 U	25 U	10 U
Benzene	l u	66 J	26	19	36	36	45	34	21 J	19 J	50 U 27 J	10 U	25 U	10 U
Bromodichloromethane	l ū	U	u	. u			່ ້ຳວບ	10 U	10 UJ	20 U	27 J 50 U	30 0.50 U	7.5	9.8
Bromoform	U	Ū	ūl	l ŭl	ŭ	ŭ	10 U	10 U	10 UJ	20 U	50 U		2.5 U	1 U
Bromomethane	l ul	Ū	ūl	Ŭ	· ŭ	ŭ	10 U	10 U	10 UJ	20 U	50 U	0.50 U	2.5 U	10
Carbon Disulfide	i u	U	ū	Ü	ŭ	ŭ	10 U	10 U	10 UJ	20 U	50 U	1.0 U 0.50 U	5.0 UJ	2 UJ
Carbon Tetrachloride	lυ	υl	ū	Ŭ		ŭ	10 U	10 U	10 UJ	20 U	50 U	0.50 U	25 U	10 U
Chlorobenzene	l ul	85	30	25	29	28	36	36	24 J	23	30 J	60	2.5 U 27	10
Chloroethane	l u	ul	u	u	ul	- U	10 U	10 U	10 UJ	20 U	50 U	11	27 5.0 U	18
Chloroform	67	90	Ü	Ū	ūl	Ŭ	10 U	10 U	10 03	20 U	50 U	0.50 U	3.8 U	2 UJ
Chloromethane	l u	υl	U	Ū	ūl	Ū	10 U	10 U	10 UJ	20 U	50 U	1.0 U	25 U	1.5 U
cis-1,3-Dichloropropene	U	U	υl	U	ŪΙ	Ū	10 U	10 U	10 UJ	20 U	50 U	0.50 U	25 U	5 U 1 U
Dibromochloromethane	U	U	U	u	ül	Ū	10 U	10 U	10 UJ	20 U	50 U	0.50 U	2.5 U	101
Ethylbezene	U	U	υl	ul	ul	Ū	10 U	10 U	10 UJ	1 J 2 0	50 U	0.11 J	2.5 U	1 0
Methylene Chloride	υ	υ	υl	U	υl	Ū	10 U	10 U	10 UJ	20 U	50 U	2.0 U	12 U	10 0
Styrene	l u	U	U	u]	u	U	10 U	10 U	10 UJ	20 U	50 U	0.50 U	2.5 U	10
Tetrachloroethene	U	U	U	U	u	U	10 U	10 U	10 UJ	20 U	50 U	0.50 U	2.5 U	10
Toluene	U	υļ	U	U	U	U	10 U	0.6 J	10 UJ	20 U	50 U	1.6	3.8 U	1.5 U
trans-1,3-Dichloropropene	∪	· U	U	υ	υľ	U	10 U	10 U	10 UJ	20 U	50 U	0 50 U	2.5 U	1.30
Trichloroethene	ᅵ 비	52	8	υĺ	29	32	8 J	10 U	72 J	63	230	30	2.5 U	10
Vinyl Chloride	ᅵ	υ	7	υ	200	87	45	24	61 J	75	200	480	100	59
Xylene (total)	<u> </u>	U	U	U	υl	u	10 U	10 U	10 UJ	20 U	50 U	1.1	2.5 U	10
Units: ug/L													2.301	

Units: ug/L U = non-detected

J = estimated

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12	MW-12
DEPTH	['					"""	10,000.12	1014 4- 17	10104-12
COMPOUND	17 JAN 85	17 JAN 85	13 MAR 86	25 FEB 88	20 AUG 92	2 DEC 92	11 FEB 93	4 MAY 93	22 MAR 95	18 NOV 99	23 MAR 01	14 JUNE 01
1,1,1-Trichloroethane	U	Ü	· U	150	200 UJ	500 U	500 U	500 U			NS	NS
1,1,2,2-Tetrachloroethane	540	U	U	U	200 UJ	500 U	500 U	500 U			NS	NS NS
1,1,2-Trichloroethane	U	U	U	υl	200 UJ	500 U	500 U	500 U			NS NS	
1,1-Dichloroethane	U	U	U	7	200 UJ	500 U	500 U	500 U			NS NS	NS
1,1-Dichloroethene	U	υ	ປ	87	200 UJ	500 U	500 U	500 U			NS NS	NS
1,2-Dichloroethane	U.	U	U	· u	200 UJ	500 U	500 U	500 U			NS NS	NS
1,2-Dichloroethene (total)	120	130	2900	30000	2300 J	6100	15000 J	8000	13000	2.0 U		NS
1.2-Dichloropropane	l ul	U	111	u	200 UJ	500 U	500 U	500 U			NS	NS
2-Butanone	l ul	ŭ.	ŭl	ŭ	200 UJ	500 U	500 U	500 U	1000 U	1.0 U	NS	NS
2-Hexanone	ان ا	ŭĺ	ŭ	ĭil	200 UJ	500 U	500 U	500 U		20 U	NS	NS
4-Methyl-2-Pentanone	170 J	380	ŭ	ŭl	200 UJ	500 U	500 UJ	500 U	1000 U	10 U	NS	NS
Acetone	l ul	ul	ŭ	ĭil	540 J	500 U	500 U		1000 U	10 U	NS	NS
Benzene	540	600	300	340 J	150 J	. 99 J		500 U	1000 U	20 U	NS	NS
Bromodichloromethane	اں " را	u	JU U	3403	200 UJ	500 U	390 J	270 J	320 J	61	NS	NS
Bromoform	ان ا	ŭ	ŭl	ŭl	200 UJ	500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Bromomethane	ان	ŭ	ŭl	ŭl	200 UJ	500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Carbon Disulfide	ا نا	ŭ	ŭl	ŭl	200 UJ	500 U	500 U	500 U	1000 U	2.0 U	NS	NS
Carbon Tetrachloride	ان ا	ĭil	ŭl	ŭ	200 UJ	500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Chlorobenzene	230	260	110	220 J	64 J	500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Chloroethane	l Zoo ul	200 11	່່	2203	200 UJ		200 J	120 J	180 J	37	NS	NS
Chloroform	74 J	190 J	ŭl	ŭl	200 UJ	500 U	500 U	500 U	1000 U	2.0 UJ	NS	NS
Chloromethane	اں "' ا	اں '''	ŭ	ŭl	200 UJ	500 U	500 U	500 U	1000 U	1.0 U	NS	. NS
cis-1,3-Dichloropropene	ان ا	ŭl	ŭl	ŭ	200 UJ		500 U	500 U	1000 U	2.0 U	NS	NS
Dibromochloromethane	ان ا	ŭ	ŭl	ŭ	200 UJ	500 U 500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Ethylbezene	ان ا	56	53 J	290 J	30 J	20 J	500 U	500 U	1000 U	1.0 U	NS	NS
Methylene Chloride	480	550	, JS 3, U	290 J	200 UJ		500 U	170 J	170 J	1.0 U	NS	NS
Styrene	11	550	ŭl	U	200 UJ	500 U	500 U	500 U	1000 U	4.0 U	NS	NS
Tetrachloroethene	ŭ			ŭ		500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Toluene	i ii		40 J	280 J	200 UJ	500 U	500 U	500 U	1000 ປ	1.0 U	NS	NS
trans-1,3-Dichloropropene		il.	40 J	280 J	200 UJ	9 J	160 J	500 U	130 J	0.26 J	NS	NS
Trichloroethene	ı M	ŭl	il.	il.	200 UJ	500 U	500 U	500 U	1000 U	1.0 U	NS	NS
Vinyl Chloride	ان	ü	620	6400	200 UJ	430 J	390 J	31 J	1000 U	1.0 U	NS	NS
Xylene (total)	ı il	ŭ	57 J	67	300 J	520	1900 J	1400	2100	2.0 U	NS	NS
Units: ug/L	91	<u> </u>	3/ J	6/	200 UJ	500 U	89 J	31 J	1000 U	5.4	NS	NS
II = non detected												

U = non-detected
J = estimated

NS= Not sampled

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1		1 22
DEPTH	-			00	00/11	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1	GCA-1
COMPOUND	15 JAN 85	15 MAY 85	13 MAR 86	25 FEB 88	25 AUG 92	2 DEC 92	12 FEB 93	28 APR 93	21 MAR 95	18 NOV 99	23 MAR 01	14 JUNE 01
1,1,1-Trichloroethane	U	U	U	U	200 U	200 U	200 UJ	200 U	45 J	50 U	050	
1,1,2,2-Tetrachloroethane	U	U	υ	U	200 U	200 U	200 UJ	200 U	250 U		0.5 U	
1,1,2-Trichloroethane	U	υ	. U	U	200 U	200 U	200 UJ	200 U	250 U		0.75 U	0.75 U
1,1-Dichloroethane	U	υ	· u	U	200 U	200 U	200 UJ	200 U	250 U		0.75 U	0.75 U
1,1-Dichloroethene	U	U,	' u	20	200 U	200 U	200 UJ	18 J	250 U		0.75 U	0.50
1,2-Dichloroethane	บ	υ	U	u	200 U	200 U	200 UJ	200 U	250 U	50 U	0.75 U	
1,2-Dichloroethene (total)	2300	8400	3000	4000	2500	3100	3900 J	4800	4500	11052	45	23
1,2-Dichloropropane	U	U	υl	U	200 U	200 U	200 UJ	200 U	250 U	50 U	45 2.5 U	
2-Butanone	U	U	U	ūl	200 U	200 U	200 UJ	200 U	250 U	1000 U	2.5 U 5.0 U	1.8 U
2-Hexanone	U	υi	ü	ŭl	200 U	200 U	200 UJ	200 U	250 U	500 U	5.0 U	5 UJ
4-Methyl-2-Pentanone	, υ	υi	ū	ŭl	200 U	200 U	200 UJ	200 U	250 U	500 U	5.0 U	.5 UJ 5 U
Acetone	υ	u	υl	ūί	200 U	200 U	200 UJ	200 U	250 U	1000 U	5.0 UJ	
Benzene	210	200	130	100	41 J	31 J	43 J	48 J	77 J	470	5.0 UJ 56	5 UJ
Bromodichloromethane	U	u	u u	u	200 U	200 U	200 UJ	200 U	250 U	50 U	0.5 U	71
Bromoform	U	Ū	ūl	ŭ	200 U	200 U	200 UJ	200 U	250 U	50 U	0.5 U	0.5 U
Bromomethane	บ	U	ul	ŭ	200 U	200 U	200 UJ	200 U	250 U	100 U	1.0 UJ	0.5 U
Carbon Disulfide	U	U	ul	ŭ	200 U	200 U	200 UJ	200 U	250 U	50 U	5.0 U	1 0
Carbon Tetrachloride	U	Ü	Ü	ŭl	200 U	200 U	200 UJ	200 U	250 U	50 U	0.5 U	5 U
Chlorobenzene	110	100	69 J	53	25 J	25 J	200 UJ	200 U	36 J	320	40	0.5 U 54
Chloroethane	u	u	· ul	ul	200 U	200 U	200 UJ	200 U	250 U	100 UJ	5.3	54 1 U
Chloroform	29	υl	υl	ūl	200 U	200 U	200 UJ	200 U	250 U	50 U	0.75 U	0.75 U
Chloromethane .	υİ	υ	U	υl	200 U	200 U	200 UJ	200 U	250 U	100 U	5.0 U	0.75 U
cis-1,3-Dichloropropene	υl	υl	ul	υl	200 U	. 200 U	200 UJ	200 U	250 U	50 U	0.5 U	2.5 U
Dibromochloromethane	u	u	ūΙ	Ū	200 U	200 U	200 UJ	200 U	250 U	50 U	0.5 ป	0.5 U
Ethylbezene	190	330	72	160	200 U	85 J	98 J	99 J	86 J	93	2.3	2.2
Methylene Chloride	790	U	U	U	200 U	200 U	200 UJ	200 U	250 U	200 U	2.5 U	ź.ź
Styrene	U	U	υl	23	200 U	200 U	200 UJ	200 U	250 U	50 U	050	0.5 U
Tetrachloroethene	U	U	U	ul	200 U	200 U	200 UJ	200 U	250 U	50 U	0.5 U	0.5 U
Toluene	110	190	44 J	130	200 U	40 J	32 J	200 U	250 U	74	0.92	1.2
trans-1,3-Dichloropropene	υ	υl	U	· u	200 U	200 U	200 UJ	200 U	250 U	50 U	0.52	0.5 U
Trichloroethene	1900	2400	240 J	1800	56 J	1300	1000 J	750	370	160	0.5 U	0.5 U
Vinyl Chloride	260	430	110 J	92	120 J	150 J	200 J	210	290	1700	19	11
Xylene (total)	30	u	U	6	66 J	200 U	200 UJ	200 U	250 U	59	4.4	5.6
Units: ug/L									2000			3.0

U = non-detected

J = estimated

- TABLE 4

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	FC14	F614
DEPTH	72'	72'	72'	72'	72'	72'	72'	ECJ-1	ECJ-1
COMPOUND	15 MAR 88	20 AUG 92	9 DEC 92	10 FEB 93	4 MAY 93	23 MAR 95	18 DEC 99	72'	72'
1.1.1-Trichloroethane	Ú	5000 U		5000 UJ	10000 U	10000 U		24 MAR 01	
1.1.2.2-Tetrachloroethane	ا ن	5000 U		5000 UJ	10000 U	10000 U	0.50 U	200 U	200 U
1,1,2-Trichloroethane	ľ	5000 U	5000 UJ	5000 UJ	10000 U		0.50 U	0	200 U
1.1-Dichloroethane	ŭ	5000 U	5000 UJ	5000 UJ	10000 U	10000 U	43	300 U	300 U
1.1-Dichloroethene	Ü	530 J	450 J	5000 UJ	10000 U	10000 U	0.50 U	300 U	300 U
1.2-Dichloroethane	l ŭ	5000 U		5000 UJ		10000 U	480 J	300 U	200 U
1.2-Dichloroethene (total)	6900	77000	67000 J	59000 J	10000 U	10000 U	15	200 U	200 U
1.2-Dichloropropane	U-0300	5000 U	5000 J	5000 J	110000	200000	120620 J	21000	27000
2-Butanone	l ŭi	5000 U	5000 UJ		10000 U	10000 U	0.50 U	700 U	700 U
2-Hexanone	l ä	5000 U	5000 UJ	5000 UJ	10000 U	10000 U	10 U	2000 U	2000 U
4-Methyl-2-Pentanone	l äl	5000 U	5000 UJ	5000 UJ	10000 U	10000 U	5.0 U	2000 U	2000 U
Acetone	ŭ	5000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	5.0 U	2000 U	2000 U
Benzene	์ เ	· 5000 U		5000 UJ	10000 U	10000 U	· 10 U	2000 UJ	2000 U
Bromodichloromethane	ŭ	5000 U	5000 UJ	5000 UJ	450 J	10000 U	140 J	200 U	200 U
Bromoform		5000 U	5000 UJ 5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	200 U	200 U
Bromomethane		5000 U	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	200 U	200 U
Carbon Disulfide	: ::I	5000 U	5000 UJ	5000 UJ	10000 U	10000 U	1.0 U	400 UJ	400 U
Carbon Tetrachloride	ı SI	5000 U		5000 UJ	10000 U	10000 U	0.50 U	2000 U	2000 U
Chlorobenzene		5000 U	5000 UJ	5000 UJ	10000 U	10000 U	0.50 ป	. 200 U	200 U
Chloroethane		5000 U	5000 UJ	5000 UJ	10000 U	10000 U	2.2	700 U	200 U
Chloroform		5000 U		5000 UJ	10000 U	10000 U	1.0 UJ	400 U	400 U
Chloromethane		5000 U	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	300 U	300 U
cis-1.3-Dichloropropene	띪	5000 U	5000 UJ 5000 UJ	5000 UJ	10000 U	10000 U	1.0 U	2000 U	1000 U
Dibromochloromethane		5000 U	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	200 U	200 U
Ethylbezene		5000 U	670 J	5000 UJ 1100 J	10000 U	10000 U	0.50 U	200 U	200 U
Methylene Chloride	ŭ	5000 U	5000 UJ		5100 J	5100 J	1900	680	790
Styrene		5000 U	5000 UJ	5000 UJ	10000 U	10000 U	2.0 U	1000 U	2000 U
Tetrachloroethene	ii ii	5000 U	5000 UJ	5000 UJ 5000 UJ	10000 U	10000 U	1.8	200 U	200 U
Toluene	ŭ.	5000 U	440 J		10000 U	10000 U	3.1	200 U	200 U
trans-1.3-Dichloropropene	ŭ	5000 U	5000 UJ	5000 UJ 5000 UJ	10000 U	10000 U	360 J	300 U	360
Trichloroethene	57000	15000	36000 J	22000 J	10000 U	10000 U	0.50 U	200 U	200 U
Vinyl Chloride	37000 U	3700 J	1400 J	1800 J	100000	10000 U	19000	200 U	200 U
Xylene (total)	il.	870 J	5000 UJ	5000 UJ	3000 J	6200 J	2700	5100	8900
Units ug/L		0103	3000 03	2000 01	10000 U	10000 U	72	200 U	200 U
II = pop detected				•					

U = non-detected
J = estimated

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	ECJ-2	ECJ-2	ECJ-2	ECJ-2	ECJ-2	ECJ-2	ECJ-2	ECJ-2	ECJ-2	ECJ-2
DEPTH	82'	82'	82'	82'	82'	82'	82'	82'	82	82'
COMPOUND	3 MAR 88	3 MAR 88	31 AUG 92	7 DEC 92	12 FEB 93	7 MAY 93	24 MAR 95	3 JAN 00		20 JUNE 01
1,1,1-Trichloroethane	Ü	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		200
1,1,2,2-Tetrachloroethane	U	l u	1000 ປ	1000 UJ	2000 U	1200 U	5000 U	120 U		200
1.1,2-Trichloroethane	U	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		300 (
1,1-Dichloroethane	U	5	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		300 1
1,1-Dichloroethene	42	53	1000 U	71 J	2000 U	49 J	5000 U	120 U		200
1,2-Dichloroethane	U		1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		200 (
1,2-Dichloroethene (total)	10000 J	13000 J	7900	24000 J	21000	27000	51000	922 J	530	200 (
1,2-Dichloropropane	U	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		700 t
2-Butanone	U	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	2500 U		2000 (
2-Hexanone	U	υ	1000 U	1000 UJ	2000 U	1200 U	5000 U	1200 U		2000 (
4-Methyl-2-Pentanone	1000	3200	1000 U	2100 J	2000 U	2300	5000 U	1200 U		2000 (
Acetone	U	U	1000 U	1000 เม	2000 U	1200 U	5000 U	2500 U		
Benzene	60	77	1000 U	85 J	2000 U	190 J	5000 U	80 J	100 U	2000 (
Bromodichloromethane	υ	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		200 (
Bromoform	U	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		200 (
Bromomethane	U	ul	1000 U	1000 UJ	2000 U	1200 U	5000 U	250 U	1 - 1	200 L
Carbon Disulfide	U	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		400 U.
Carbon Tetrachloride	υĺ	υl	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		. 2000 (
Chlorobenzene	17	22	1000 U	4 J	2000 U	1200 U	5000 U	120 U		200 L
Chloroethane	ul	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	250 UJ		200 L
Chloroform	u	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		400 U
Chloromethane	υl	ul	1000 U	1000 UJ	2000 U	1200 U	5000 U	250 U	1000 U	300 U
cis-1,3-Dichloropropene	υl	υl	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U		1000 U
Dibromochloromethane	U	ūΙ	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U	100 U	200 U
Ethylbezene	270	410	570 J	990 J	960 J	660 J	1300 J	1000 U	100 U	200 U
Methylene Chloride	ul	Ū	1000 U	1000 UJ	2000 U	1200 U	5000 U	. 500 U	710	990
Styrene	220	320	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U	500 U	2000 U
Tetrachloroethene	14	16	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U	100 U	200 U
Toluene	580	900	1000 U	1400 J	1500 J	1200 U	2100 J	940	100 U	200 U
trans-1,3-Dichloropropene	υİ	U	1000 U	1000 UJ	2000 U	1200 U	5000 U	120 U	740	1000
Trichloroethene	9500	14000	1000 U	12000 J	15000	9000	4500 J	120 U	100 U	20 U
Vinyl Chloride	560	1000	11000	3600 J	2000 U	5800	13000 J		100 U	200 U
Xylene (total)	12	14	660 J	1000 UJ	2000 U	1200 U	5000 U	14000 120 U	14000	22000
Units: ug/L				501	2000 01	1200 01	3000 0]	120 0]	100 U	200 L
U = non-detected		_								

J = estimated

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

VOLATILE ORGANIC COMPOUNDS

WELL NUMBER	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1	ECJ-1
DEPTH	122'	122'	122'	122'	122'	122'	122'	122'	122
COMPOUND	15 MAR 88	20 AUG 92	9 DEC 92	10 FEB 93	3 MAY 93	23 MAR 95	18 DEC 99	24 MAR 01	
1,1,1-Trichloroethane	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	
1,1,2,2-Tetrachloroethane	U	2000 UJ	5000 UJ	. 5000 UJ	10000 U	10000 U	0.50 U	50 U	
1,1,2-Trichloroethane	υ	2000 UJ	5000 UJ	5000 UJ	10000 U	- 10000 U	0.50 U	75 U	
1,1-Dichloroethane	· U	2000 UJ	5000 บม	5000 UJ	10000 U	10000 U	0.50 U	75 U	
1,1-Dichloroethene	U	2000 UJ	260 J	5000 UJ	10000 U	10000 U	170 J	75 U	
1.2-Dichloroethane	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	11	50 U	
1,2-Dichloroethene (total)	12000	22000 J	110000 J	130000 J	150000 J	140000	62320 J	6500	3500
1,2-Dichloropropane	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	180 U	
2-Butanone	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	10 U	500 U	
?-Hexanone	υ	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	5.0 U	500 U	
I-Methyl-2-Pentanone	U	2000 UJ	1700 J	5000 UJ	10000 U	10000 U	5.0 U	500 U	
Acetone	υ	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	10 U	500 UJ	500 (
Benzene ·	U	2000 UJ	5000 UJ	5000 UJ	440 J	· 10000 U	150 J	290	400
Bromodichloromethane	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	500 L
Bromoform	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	500 t
Bromomethane	υl	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	1.0 U	100 UJ	100 (
Carbon Disulfide	u	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	500 U	500 (
Carbon Tetrachloride	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	50 (
Chlorobenzene	υl	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	2.6	180 U	180
Chloroethane	υl	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	1.0 UJ	100 U	100 t
Chloroform	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	75 U	75 U
hloromethane	υİ	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	1.0 U	500 U	250 U
is-1,3-Dichloropropene	υ	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	50 U
Dibromochloromethane	υļ	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	50 U
thylbezene	υl	2000 UJ	3300 J	4000 J	10000 U	3900 J	2000	450	830
Methylene Chloride	υl	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	2.0 U	250 U	500 L
Styrene	υl	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.91	50 U	50 L
etrachloroethene	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	50 U
oluene	υ	2000 UJ	2400 J	2900 J	10000 U	3100 J	1100	92	110
ans-1,3-Dichloropropene	U	2000 UJ	5000 UJ	5000 UJ	10000 U	10000 U	0.50 U	50 U	50 U
richloroethene	74000	5300 J	29000 J	5000 UJ	690 J	10000 U	11	50 U	50 U
inyl Chloride	υ	2000 UJ	2100 J	4700 J	6600 J	13000	6100	1200	3200
(ylene (total)	U	180 J	96 J	5000 UJ	10000 U	10000 U	46	50 U	50 U
Inits: ug/L			·				,	3001	30 0

Units: ug/L U = non-detected

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

POLYCHLORINATED BIPHENYLS

WELL NUMBER DEPTH	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A	MW-22A
COMPOUND	5 FEB 86	18 MAR 86	24 FEB 88	23 AUG 92	2 DEC 92	11 FEB 93	28 APR 93	21 MAR 95	17 NOV 99	27 MAR 01	JUN 01
Aroclor-1016	l ul	U.	·U	1.0 UJ	500 U	1000 UJ	100.0 U	20 U	26 U		
Aroclor-1221	l ul	.U	ii.	2.0 UJ	1000 U						NS
Aroclor-1232	1 51	ŭ			-				· 2.6 U	4.64U	NS
	1 31	U	U	1.0 UJ	500 U	1000 UJ	100.0 U	20 ⊍	26 U	4.640	NS
Aroclor-1242	i U	U	U	1.0 UJ	500 U	1000 UJ	100.0 U	20 U	22*	4.64U	
Aroclor-1248	l ul	υi	65.0 J	1.0 UJ	500 U	1000 UJ		1			NS
Aroclor-1254	150.0 C	- id	93.0 J		-				26 U	4.64U	NS
Aroclor-1260	1 ,00.0 51		93.0 3		3100 J	5000 J	410 J	37	2.6 U	4.640	NS
Units: uo/L		U	U	1.0 UJ	500 U	1000 UJ	100.0 U	20 U	32	4.64U	NS

Units: ug/L U= non-detected J= estimated NS= not sampled *= altered 1242 pattern

SULLIVAN'S LEDGE SUPERFUND SITE FIRST OPERABLE UNIT HISTORICAL GROUNDWATER DATA

POLYCHLORINATED BIPHENYLS

WELL NUMBER DEPTH	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A	MW-6A
COMPOUND	17 JAN 85	17 JAN 85	21 MAY 85	12 MAR 86	24 FEB 88	24 FEB 88	27 AUG 92	17 NOV 92	17 FEB 93	29 APR 93	24 MAR 95	24 MAR 95			
Aroclor-1016	U	U	Ú	U	U	U	10 U	1.0 U						20 MAR 01	JUN 01
Aroclor-1221	U	υ	U	U.	U	· · ·	2.0 U			0			0.000	2.5∪	NS
Aroclor-1232	l u	· ui	ul	ū	ŭ	Ü						1.0 U	0.53 ∪	2 5U	NS
Aroclor-1242	i ol	- id	ŭ	ŭ		U	1.0 U				1.0 U	10 U	0.53 U	2.50	NS
Aroclor-1248	l ŭl	ŭ		Ü	U		1.0 U	1.0 U				10 U	0.53 U		NS
Aroclor-1254	1.6	1.39	1.0	ŭl	Ü	U	1.0 U	1.0 U	1.0 UJ		1.0 U	10 U	0.53 U	2 5U	NS
Aroclor-1260	l ul	U			il.		0 014 J	0.87 J		1.0 U	1.7	15	0.12 J	2.5U	NS
Units: ug/L							1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	0.53 U	2.5U	NS

U = non-detected J = estimated

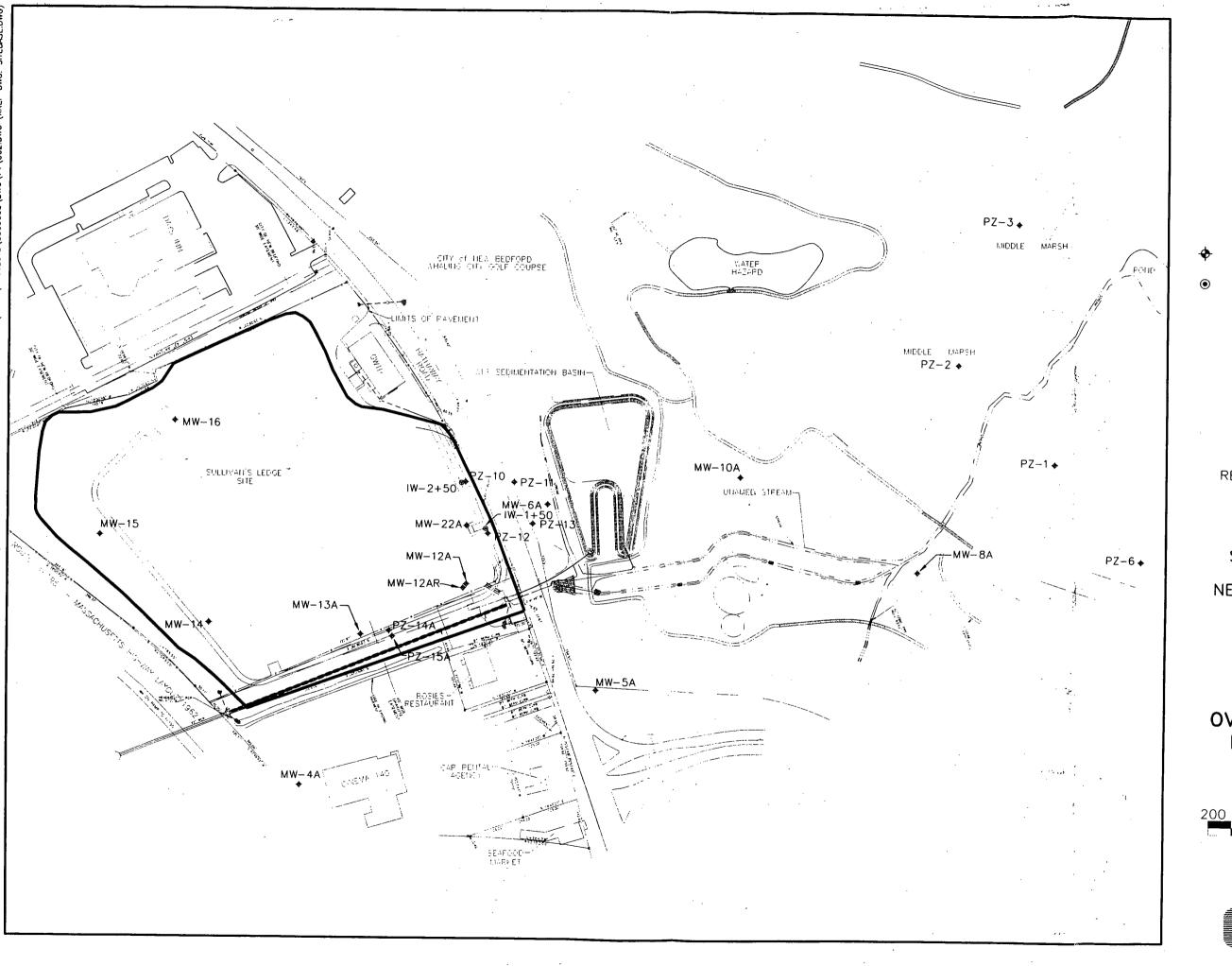
NS = not sampled

TABLE 6 SULLIVAN'S LEDGE SUPERFUND SITE GROUNDWATER ANALYSIS ORGANIC COMPOUND SUMMARY⁽¹⁾

Monitoring Well		Location	Total Volati	le Organic ((ug/l)	compounds	То	tal PCBs (ug	1/I)	Total Semivolatile Organic Compounds (ug/l)			
	Set ⁽²⁾	Group	Winter 1999	Spring 2001	Summer 2001	Winter 1999	Spring 2001	Summer 2001	Winter 1999	Spring 2001	Summer 2001	
MW - 16	В	Overburden	5,1	ND		2.50						
MW - 15	В	Overburden	14.5	126.9	ND 125.9	0.90	ND.	ND	ND	ND	N:	
MW - 14	В	Overburden	639.5	965.0	974.0	1.50	3.70	ND	8.8	6.0	N:	
MW - 24	В	Shallow Bedrock	3843.3	6530.0	3480.0	0.83 47.00	ND	ND	91.6	63.1	N:	
MW - 2	В	Shallow Bedrock	3440.0	2181.0	905.0		36.70	ND	66.9	39.8	N.	
ECJ-3 (51)	В	Shallow Bedrock	NS	15.0	ND.U	17.00	8.61	5.9	134.6	47.5	N:	
ECJ-3 (91)	В	Shallow Bedrock	NS	ND	1.0	NS NS	ND	ND	NS	ND	NS	
ECJ-3 (126)	В	Intermed Bedrock	NS	ND	0.96	NS	ND ND	ND ND	NS NS	ND ND	N:	
MW - 13A	A	Overhood a	20.0						143		NS	
MW-12AR	A	Overburden	28.8	10.2	4.09	0.31	ND	NS	ND	ND	NS	
MW - 22A		Overburden Overburden	NS	205.5	217.3	NS	ND	ND	NS	47.9	NS	
MW - 13		Shallow Bedrock	1782.0	539.2	96.1	25.20	ND	NS	2231.3	229.7	NS	
MW - 17	Â	Shallow Bedrock	991.6	7.1	2.1	0.26	ND	NS	ND	ND	NS	
MW - 12	A	Shallow Bedrock	36.4 104.1	1.2	20.25	ND	ND	NS	15.0	ND	NS	
GCA - 1	Â	Shallow Bedrock	13946.0	NS NS	NS	0.27	NS	NS	25.8	NS	NS	
ECJ 1 (37)	A	Shallow Bedrock	2297.6	172.9 109.0	229.6	14.00	ND ND	ND	247.4	26.6	NS	
ECJ 1 (62)	Ā	Shallow Bedrock	72950.1		64.0	1.10	2.85	2.08 J	36.1	ND	NS	
ECJ 1 (72)	A	Shallow Bedrock	145337.1	9410.0 26780.0	5383.0	0.52	0.75	ND	118 0	ND	NS	
ECJ 1 (122)	A	Intermed Bedrock	71911.5	8532.0	37050.0	ND	ND	ND	152.4	21.0	NS	
ECJ 1 (148)	A	Intermed Bedrock	36477.2	74600.0	8220.0	ND	ND	1.56	100.5	188.9	NS	
ECJ 1 (267)	Α	Deep Bedrock	160.5	52.1	104600.0 39.8	0.44 ND	ND ON	ND ND	109.4 5.9	182.6	NS	
							- '\-	IND	5.9	ND	NS	
MW - 6A	С	Overburden	1835.1	314.5	158.0	0.12	ND	NS	4.6	ND		
MW - 4A	С	Overburden	1.8	ND	ND	ND	ND	NS	ND ND	ND	NS	
MW - 5A	С	Overburden	ND	ND	2.0	ND	ND	NS	ND	ND	NS	
MW - 6	C	Shallow Bedrock	4837.2	2950.0	3998.0	ND	ND	NS	5.6	ND	NS	
MW - 4	С	Shallow Bedrock	1271.9	1034.2	1113.2	ND	ND	NS	ND	ND	NS NS	
MW - 5	C	Shallow Bedrock	ND	6.8	3.6	ND	ND	NS	ND	ND	NS	
ECJ 2 (47)	С	Shallow Bedrock	2533.0	1920.0	2468.0	ND	ND	ND	3.2	ND	NS	
ECJ 2 (82)	C	Intermed Bedrock	15942.0	16080.0	23990.0	ND	ND	, ND	4.4	ND	NS NS	
ECJ 2 (117)	С	Intermed Bedrock	55380.0	29730.0	51600.0	ND	ND	ND	8.8	ND	NS NS	
ECJ 2 (152)	С	Intermed Bedrock	400.4	4594.0	6180.0	ND	ND	ND	ND ND	9.0	NS NS	
ECJ'2 (187)	С	Deep Bedrock	3605.8	4440.0	76.37	ND	ND	NS	2.6	9.8	NS	
MW-10A	D	Overburden	NC.									
MW - 8A	D	Overburden	NS NS	8.6	17.93	NS	ND	NS	NS	ND	NS	
MW-10	<u>D</u>	Shallow Bedrock	ND	ND	ND	ND	ND	ND	ND	ND	NS	
MW-10B	<u>D</u>	Shallow Bedrock	NS	12.9	27.65	NS	ND	NS	NS	ND	NS	
MW - 8		Shallow Bedrock	NS	13.6	33.8	NS	ND	NS	NS	ND	NS	
ECJ 4 (62)		Shallow Bedrock	ND	ND	ND	ND	ND	ND	ND	ND	NS	
ECJ 4 (87)	D	Intermed Bedrock	0.6	ND	13.0	ND	ND	ND	ND	ND	NS	
ECJ 4 (132)	D .	Intermed Bedrock	1.5	0.7	ND	ND	ND	ND	ND	ND	NS	
ECJ 4 (162)	D	Intermed Bedrock	16.7	ND 110	ND	ND	ND	, ND	ND	ND	NS	
ECJ 4 (227)	0	Deep Bedrock	7.0	11.8	5.9	ND	ND	ND	3.5	ND	NS	
ECJ 4 (245)	<u> </u>	Deep Bedrock	15.4	4.3	5.74	ND	ND	·ND	ND	ND	NS	
		Deep Deditork	10.4	5.1	3.74	ND	ND	ND	ND	ND	NS	

Notes:

- Winter 1999 samples collected by O'Brien & Gere Engineers, Inc. and analyzed by OBG Laboratories. Spring 2001 samples collected by Mabbett & Associates, Inc. and analyzed by Alpha Analytical, Inc. Summer 2001 samples collected by Mabbett & Associates, Inc. and analyzed by Alpha Analytical, Inc.
- Set A = Inside Disposal Area, immediately downgradient of disposal pit.
 Set B = Inside Disposal Area, immediately upgradient of disposal pit.
 - Set C = Outside Disposal Area, within 300 feet of Disposal Area.
 - Set D = Outside Disposal Area, greater than 300 feet from Disposal Area (downgradient).





LEGEND

- MONITORING WELL LOCATION
- RECOVERY WELL LOCATION

ELEVATIONS IN FEET RELATIVE TO MEAN SEA LEVEL

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

OVERBURDEN WELL LOCATION MAP



FILE NO. 5509.005-002 AUGUST 2001





LEGEND

- MONITORING WELL LOCATION
- RECOVERY WELL LOCATION

ELEVATIONS IN FEET RELATIVE TO MEAN SEA LEVEL

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

SHALLOW BEDROCK WELL LOCATION MAP



FILE NO. 5509.005-003 AUGUST 2001





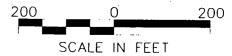
LEGEND

- ECJ WELL LOCATION
- RECOVERY WELL LOCATION

ELEVATIONS IN FEET RELATIVE TO MEAN SEA LEVEL

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

INTERMEDIATE BEDROCK WELL LOCATION MAP



FILE NO. 5509.005-004 AUGUST 2001





LEGEND

- ECJ WELL LOCATION

ELEVATIONS IN FEET RELATIVE TO MEAN SEA · LEVEL

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

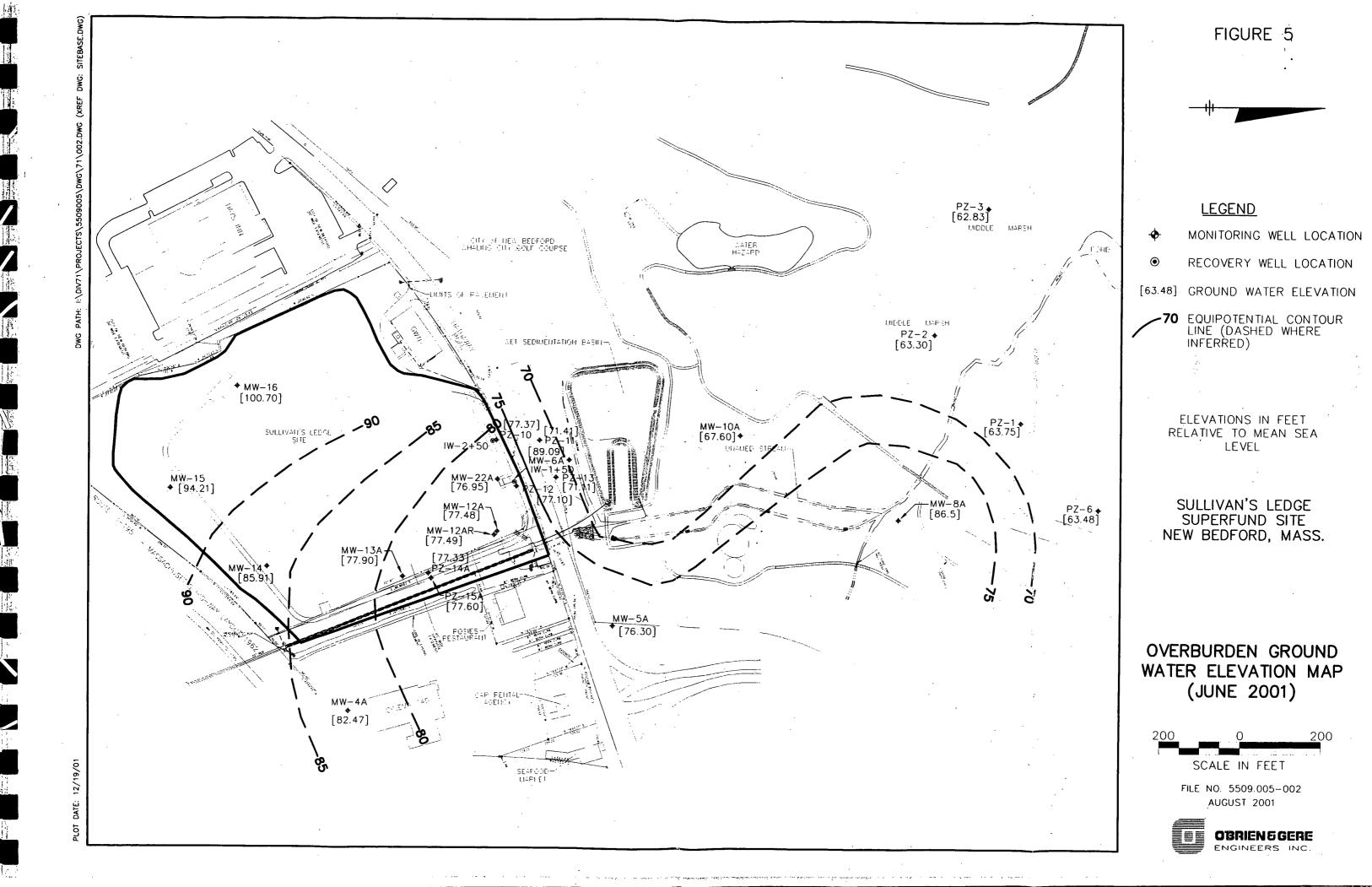
DEEP BEDROCK
WELL LOCATION MAP

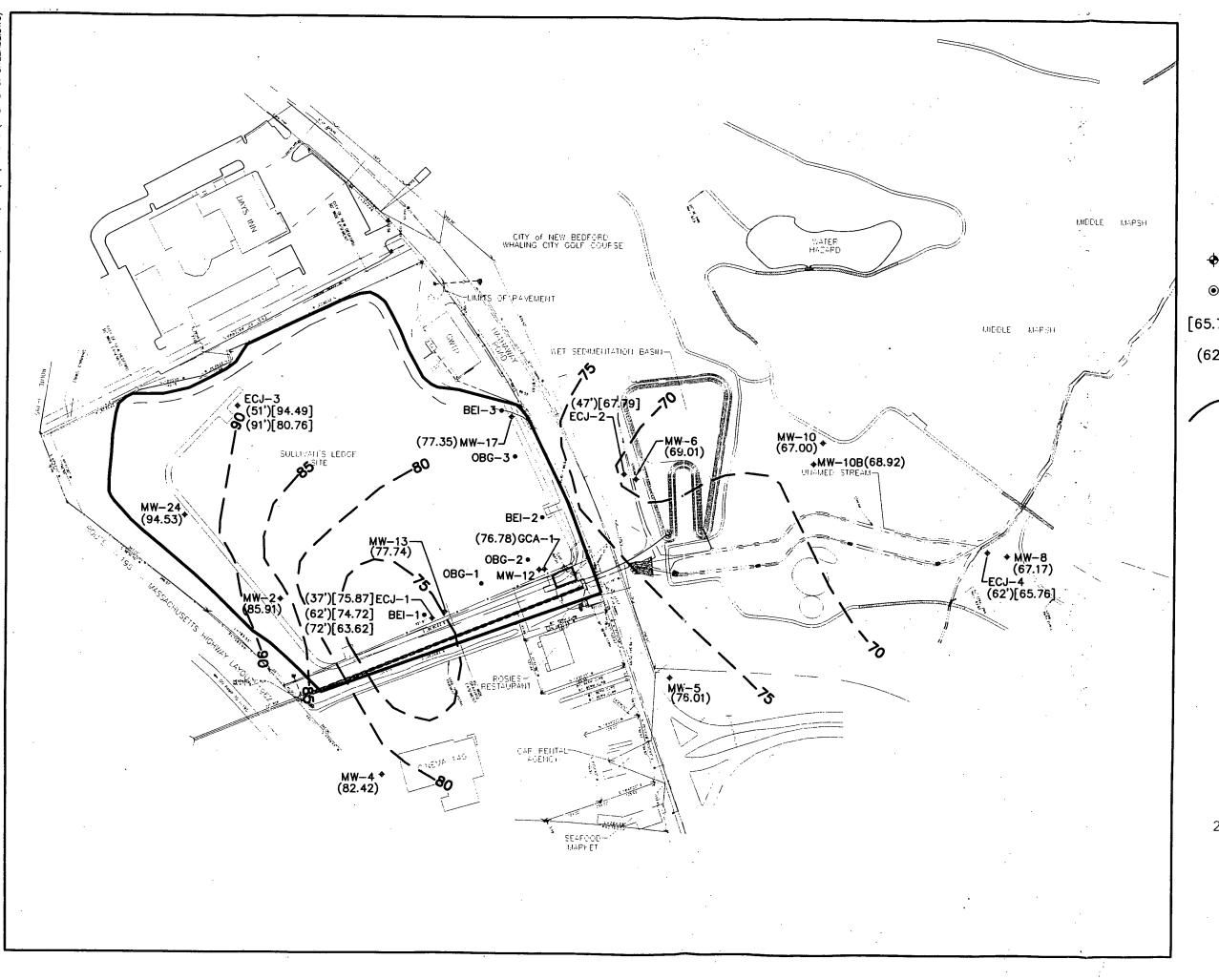


SCALE IN FEET

FILE NO. 5509.005-004 AUGUST 2001









LEGEND

- MONITORING WELL LOCATION
- RECOVERY WELL LOCATION

[65.76] GROUND WATER ELEVATION

(62') ECJ MONITORING PORT DEPTH (FT)

70 EQUIPOTENTIAL CONTOUR LINE (DASHED WHERE INFERRED)

ELEVATIONS IN FEET RELATIVE TO MEAN SEA LEVEL

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

SHALLOW BEDROCK GROUND WATER ELEVATION MAP (JUNE 2001)



FILE NO. 5509.005-003 AUGUST 2001

OBRIENEGERE

ENGINEERS INC.



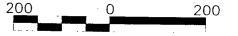
LEGEND

- ECJ WELL LOCATION
- RECOVERY WELL LOCATION

ELEVATIONS IN FEET RELATIVE TO MEAN SEA LEVEL .

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

INTERMEDIATE BEDROCK GROUND WATER ELEVATION MAP (JUNE 2001)



SCALE IN FEET FILE NO. 5509.005-004 AUGUST 2001





LEGEND

- ECJ WELL LOCATION
- RECOVERY WELL LOCATION

ELEVATIONS IN FEET RELATIVE TO MEAN SEA LEVEL

SULLIVAN'S LEDGE SUPERFUND SITE NEW BEDFORD, MASS.

DEEP BEDROCK GROUND WATER ELEVATION MAP (JUNE 2001)



SCALE IN FEET

FILE NO. 5509.005-004 AUGUST 2001



Appendix A

Correspondence

Mabbett & Associates, Inc.
Environmental Consultants & Engineers

March 14, 2001

Mr. David O. Lederer Remedial Project Manager Environmental Protection Agency (HBO) Region 1 1 Congress Street, Suite 1100 Boston, MA 02114-2023

Re:

Sullivan's Ledge Superfund Site
Spring 2001 Groundwater Sampling Event
O'Brien & Gere Engineers, Inc.
Syracuse, NY
Project No. 20015.01

Dear Dave:

On behalf of O'Brien & Gere Engineers, Inc., this letter presents clarifications and modifications to the January 2000 Field Sampling Plan for the Spring 2001 groundwater sampling event at the Sullivan's Ledge Superfund Site, and is consistent with my e-mail to you dated February 26, 2001.

Schedule: The Spring 2001 sampling event is scheduled for the weeks of March 19 and March 26, 2001, consistent with O'Brien & Gere's letter to EPA dated June 26, 2000.

Analytical Scope: The analytical scope for the Spring 2001 round will consist of an annual round. Samples from conventional wells and Westbay well ports will be analyzed for VOCs, PCBs, SVOCs, and metals. The scope of the metals analysis will be increased from RCRA 8 metals to TAL metals. The modifications to the program recommended in O'Brien & Gere's June 26, 2000 letter will not be implemented.

<u>Filtering of Samples for Metals:</u> Samples will be collected for total metals analysis only. As we discussed, this approach is consistent with Massachusetts Contingency Plan Guidance. (See MCP Master Q&A 1993-1997 #Q164 "Water to be collected from a tap should not be filtered, nor should water collected with a low flow sampling pump that is designed to minimize turbidity...").

<u>Laboratory</u>: Laboratory analysis for the project will be completed by Alpha Analytical, Inc. (Alpha). On March 12, 2001, O'Brien & Gere forwarded to EPA Alpha's Laboratory Quality Assurance Manual, and a letter from Alpha dated March 7, 2001 which summarizes laboratory reporting limits and standard laboratory control limits.

ECJ-3: ECJ-3 is the upgradient Westbay well. This well was found plugged during the 1999/2000 sampling event. HLA has indicated that it has removed the blockages, but was unable to remove a 50-ft rod which had been used for clearing from the lower portion of the well (approximately 210 ft from top of casing). At a minimum, the rod will preclude sampling the lower two ports of the well. HLA has been requested to videotape the well, to evaluate well integrity and the potential for getting Westbay sampling equipment hung up in the well. Based on the above, ECJ-3 will not be sampled until the well is videotaped and found to be suitable for sampling. We will keep you apprised of the situation.

© 2001, Mabbett & Associates, Inc.

J:\USERS\ADMINA\20015\LEDERER-07.DOC

5 Alfred Circle

01730-2346 Tel: (781) 275-6050 Fax: (781) 275-5651

info@mabbett.com www.mabbett.com

Bedford, Massachusetts

Mr. David O. Lederer March 14, 2001 Page 2 of 2

> Project Organization: Samples will be collected by Mabbett & Associates, Inc. The overall project organization will be as follows:

Title	Name	Firm
Project Coordinator: Project Manager: Project Hydrogeologist: Data Validator: Site Manager: Health & Safety Officer: Sampling Personnel:	James R. Heckathorne, PE James M. O'Loughlin, PE, LSP Guy A. Swenson, CPG Melissa S. Listman Melissa A. Smith Gregory C. Guimond Melissa A. Smith Gregory C. Guimond Darren J. Andrews Ryan E. Hill Theodore A. Nawn	OBG M&A OBG OBG M&A M&A M&A M&A M&A

We appreciated the opportunity to discuss the program with you on March 1, 2001, and look forward to completing it. Please contact Jim Heckathorne or me if we can provide any additional information.

Very truly yours,

MABBETT & ASSOCIATES, INC.

BY:

Jams m Thonglot James M. O'Loughlin, P.E., LSP Senior Project Manager

JMO/tw

cc:

S. Wood

D. Allen

R. Carey

J. Johnson

J. Heckathorne

E. Bertaut

D. Buckley

M. Listman

R. Connors

D. Dwight

M. Wade

G. Swenson

DJA, GCG, REH, JMO, TAN, MAS, (MF/RF)

df:

JEB, DAC, ANM, PDS



March 16, 2001

5 Alfred Circle Bedford, Massachusetts 01730-2346 Tel: (781) 275-6050 Fax: (781) 275-5651 info@mabbett.com www.mabbett.com

Mr. David O. Lederer Remedial Project Manager Environmental Protection Agency (HBO) Region 1 1 Congress Street, Suite 1100 Boston, MA 02114-2023

Re: Sullivan's Ledge Superfund Site
Health and Safety Plan
O'Brien & Gere Engineers, Inc.
Syracuse, NY
Project No. 20015.01

Dear Dave:

To complete the groundwater, landfill gas, and surface water/sediment sampling at Sullivan's Ledge, Mabbett & Associates, Inc. will be adopting the Health & Safety Plan developed by O'Brien & Gere for that purpose (provided to EPA on July 30, 1999). This plan was reviewed by M&A and found to be acceptable, subject to the following updates and clarifications:

Project Organization (Update to Section 1.4 and Table 1.1)

Title	Name	Telephone
Project Management Committee	Steven B. Wood	401-421-0398
Project Coordinator	James R. Heckathorne, PE	315-437-6100
Project Manager	James M. O'Loughlin, PE	781-275-6050
Technical Director of Environmental Health*	Ronald S. Ratney, Ph.D, CIH	781-275-6050
Site Health and Safety Coordinator	Gregory C. Guimond	781-275-6050
Field Team Leader	Melissa A. Smith	781-275-6050
Field Team Member	Darren J. Andrews	781-275-6050
Field Team Leader	Ryan E. Hill	781-275-6050
Field Team Member	Theodore A. Nawn	781-275-6050

Will assume duties delineated for Associate for Health and Safety

Mr. David O. Lederer March 16, 2001 Page 2 of 4

Protective Equipment (Modification to Sections 2.2 and 4.2)

Gloves: Nitrile inner gloves will be used in place of latex inner gloves.

Boots: For Level D, Modified Level D, and Modified Level C, footwear will consist of leather steel toe boots with rubber overboots. Because site soils have been remediated, and due to the slip hazard associated with mud and snow, disposable outerboots (i.e., tyvek booties) will not be worn.

Respirators: If the during groundwater sampling the concentration of VOCs in the breathing zone is 25 parts per million (ppm) above background, as measured by a PID, the well will be capped and the Project Manager will be contacted before upgrading to full face air purifying respirators with organic vapor cartridges.

Emergency Telephone Numbers (Update to Table 9-1)

Agency	Phone
Ambulance	911
St Lukes Hospital (General)	(508) 997-1515
St Lukes Hospital (Emergency Room)	(508) 961-5388
New Bedford Fire Department	(508) 991-6100
New Bedford Police Department	(508) 991-6340
New Bedford Public Works Department (Robert Carey, City Project Coordinator)	(508) 979-1527
Sullivan's Ledge Groundwater Treatment Plant	(508) 961-3160
U.S. Environmental Protection Agency (David Lederer, USEPA Project Manager)	(617) 918-1325
Massachusetts Department of Environmental Protection (Dorothy Allen, MADEP Project Manager)	(617) 292-5795
State Poison Center	(800) 682-9211
State Police	(617) 523-1212
State Emergency Response	(888) 304-1133
National Emergency Response	(800) 424-8802
Mabbett & Associates, Inc.	(800) 877-6050

Mr. David O. Lederer March 16, 2001 Page 3 of 4

Map to Hospital (Update to Figure 9-1)

An updated map to St Luke's hospital is attached.

Personal Training (Modification to Section 3.2)

Replace text in Section 3.2 with the following:

On-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations must have completed 40 hours of initial training, three days of supervised field experience, and at least 8 additional hours of specialized training.

Medical Surveillance Program (Modification to Section 5.1)

Replace text in Section 5.1 with the following:

All employees who are or may be exposed to hazardous substances or health hazards at or above the established permissible exposure limit, above the published exposure levels for these substances, without regard to the use of respirators, for 30 days or more a year; who wear a respirator for 30 days or more a year; or are injured, become ill or develop signs or symptoms due to possible overexposure involving hazardous substances or health hazards from an emergency response or hazardous waste operation are subject to the medical surveillance requirements outlined herein.

Medical examinations and consultations shall be made available by the employer to each employee prior to assignment; at least once every twelve months for each employee covered unless the attending physician believes a longer interval (not greater than biennially) is appropriate; at termination of employment or reassignment to an area where the employee would not be covered if the employee has not had an examination within the last six months; as soon as possible upon notification by an employee that the employee has developed signs or symptoms indicating possible overexposure to hazardous substances or health hazards, or that the employee has been injured or exposed above the permissible exposure limits or published exposure levels in an emergency situation; or at more frequent times, if the examining physician determines that an increased frequency of examination is medically necessary.

For employees who may have been injured, received a health impairment, developed signs or symptoms which may have resulted from exposure to hazardous substances resulting from an emergency incident, or exposed during an emergency incident to hazardous substances at concentrations above the permissible exposure limits or the published exposure levels without the necessary personal protective equipment being used, medical examinations and consultations shall be made available as soon as possible following the emergency incident or development of signs or symptoms and at additional times, if the examining physician determines that follow-up examinations or consultations are medically necessary.

Please contact the undersigned if you have any comments or if we can provide any further information.

Mr. David O. Lederer March 16, 2001 Page 4 of 4

Very truly yours,

MABBETT & ASSOCIATES, INC.

lams m D'L oughlin

BY:

James M. O'Loughlin, P.E., LSP Senior Project Manager

JMO/tw

cc:

S. Wood

D. Allen

R. Carey

J. Heckathorne

E. Bertaut

D. Buckley

R. Connors

D. Dwight

DJA, GCG, REH, JMO, TAN, RSR, MAS, (MF/RF)

df:

JEB, DAC, ANM, PDS



Directions to Saint Luke's Hospital, 101 Page Street, New Bedford, Ma.

Take Route 140 south. Continue straight onto Brownall Avenue, at the 140/Route 6 intersection. Turn left after Buttonwood Park, onto Plymouth. Follow Plymouth for approximately 0.9 miles to Page Street. Turn right onto Page St., and travel 1 1/2 blocks to Saint Luke's Hospital (on your right). The route described also has signs to assist in locating Saint Luke's Hospital.

SULLIVAN'S LEDGE NEW BEDFORD, MASSACHUSETTS	SAINT LUK DIRECT	DWG NO.	
	SCALE: AS NOTED	DR BY: DJA	M-1
Mabbett & Associates, Inc. Environmental Consultants & Engineers	DATE: 3/15/31	AP BY: JALO	PROJ NO. 20015.07



May 18, 2001

Mr. David O. Lederer Remedial Project Manager Environmental Protection Agency (HBO) Region 1 1 Congress Street, Suite 1100 Boston, MA 02114-2023

Re:

Sullivan's Ledge Superfund Site

Groundwater Monitoring

File:

5509.005 #2

Dear Dave:

In March 2001, Mabbett & Associates, Inc. (M&A) collected groundwater samples at the Sullivan's Ledge Superfund Site (i.e., Spring 2001 Round). The results of the analysis, performed by Alpha Analytical Labs, were received on May 4, 2001, and will be validated during the last two weeks of May. The purpose of this letter is to provide you with an initial summary of the results, and to recommend the analytical program for the upcoming Summer 2001 Round, which is scheduled for June 2001.

Summary of Results

Collection Trench and Bedrock Recovery Wells

On March 21, 2001, the shallow collection trench and the six bedrock recovery wells were sampled from the groundwater treatment plant taps. The results are summarized on Table 1. Although the results are generally consistent with previous rounds conducted on December 15, 2000, January 27, 2001, and June 29, 2001, some observations of the data are as follows:

- The concentrations of organic constituents appear to be declining in bedrock recovery well BEI-2;
- The concentration of PCBs in the collection trench and four of the recovery wells (i.e., OBG-2, BEI-1, BEI-2, BEI-3) were lower for the March 2001 round than the June 2000 round. There appears, however, to be a gradual increase in PCB concentration in recovery well OBG-1.
- The concentration of TCE appears to be declining in four bedrock recovery wells (i.e., OBG-2, OBG-3, BEI-2, BEI-3).

These observations are primarily provided as points of interest. None of these observations are significant enough to warrant a revision to the recovery strategy, or modification to groundwater treatment plant operation.



Groundwater Monitoring Wells

A summary of groundwater monitoring data from the Spring 2001 round is presented on Table 2. For comparative purposes, the results from the Winter 1999 round are also presented. Although the results of the two rounds are generally consistent, some observations of the data are as follows:

- In the Set A and C wells, the concentrations of total VOCs detected during Spring 2001 tended to be lower than those detected during Winter 1999, with the exception of two intermediate bedrock wells.
- In the Set B wells, the concentrations of total VOCs detected in some wells during Spring 2001 tended to be slightly higher than those detected during Winter 1999. The change, however, if present, is slight, and may be due to variability (seasonal or temporal) in the data.
- In the Set D wells, the concentrations of total VOCs detected were consistent between the two events, and were low.
- During Spring 2001, PCBs were detected in only 5 of 20 on-site wells, and 0 of 22 off-site wells. The highest concentrations of PCBs detected continue to be in MW-24.
- Consistent with previous sampling events, SVOCs in Spring 2001 were generally not detected or were detected in very low concentrations relative to VOCs.

As with the recovery data, these observations are primarily provided as points of interest. None of these observations are significant enough to warrant a revision to the recovery strategy, or modification to groundwater treatment plant operation.

Recommended Summer 2001 Program

O'Brien & Gere first proposed modifications to the groundwater monitoring program on June 26, 2000, based on the Winter 1999 baseline round. A copy of this letter is attached for your convenience.

Some of the issues presented in this letter were as follows:

Groundwater Treatment Plant Operability:

Site groundwater quality has bearing on treatment plant operability (i.e., consistency of groundwater quality with the basis of design, and capability of the groundwater treatment plant to meet discharge limitations).

A review of groundwater treatment plant operational logs indicates that between the Winter 1999 Baseline Round and the Spring 2001 Annual Round, the groundwater treatment plant has treated over 18 million gallons of groundwater. Moreover, the

treatment plant has operated relatively continuously since March 2000. Data concerning groundwater treatment plant operation was provided to EPA on August 25, 2000 and in greater detail on April 30, 2001. The conclusions of these evaluations have been that influent groundwater quality is consistent with the basis of design, and that the groundwater treatment plant is capable of meeting discharge limitations. Moreover, no trends in the data have been observed that would change these conclusions.

VOCs as a Broad Indication of Ground Water Contamination

VOCs continue to be broad indication of groundwater contamination, and based on mobility, continue to be a good indicator of potential changes in off-site migration patterns. A review of Table 2 confirms that at no well during either sampling event were PCBs or SVOCs detected without the co-detection of VOCs.

Infrequent Detection of PCBs and SVOCs

A review of Table 2 confirms that PCBs and SVOCs continue to be detected infrequently and in low concentrations relative to VOCs. As indicated above, during the Spring 2001 Round, PCBs were detected in only 5 of 20 on-site wells, and 0 of 22 off-site wells. Similarly, during the Spring 2001 Round, SVOCs were only detected in 12 of 42 wells. Analysis for these constituents on a quarterly basis in every groundwater monitoring well continues to be overly conservative and resultant in data of little pragmatic use.

<u>Metals</u>

A comprehensive list of TAL metals were analyzed in Spring 2001. The results are still being evaluated. None-the-less, metals will continue to factor into remedial decisions only for overburden wells, as they pertain to surface water quality.

In summary, the data collected over the past year corroborates the evaluation and conclusions of the June 26, 2000 letter.

O'Brien & Gere's proposal to modify the groundwater sampling program was discussed during the November 30, 2000 project meeting. At that meeting, USEPA expressed concern that site constituents may become re-distributed as a result of groundwater recovery efforts. A comparative review of the Winter 1999 data to the Spring 2001 data indicates no significant changes in groundwater quality, other than a general potential decline in total VOC concentrations in Sets A and C, and a potential increase in VOC concentration in some Set B wells, despite the fact that over 18 million gallons of groundwater had been extracted over that period.

Based on these observations, O'Brien & Gere proposes that the Summer 2001 round of groundwater sampling be consistent with that proposed in the June 26, 2000 letter, as summarized on Table 2. However, in recognition of the potential increases occurring in some of the Set B wells, as well as the fact that wells 10, 10A, and 10B were not sampled during Winter 1999, O'Brien & Gere proposes augmenting the list, as also shown on Table 2. The proposed program will result in the sampling of 32 wells and Westbay ports, which remains a significant effort.

Mr. David O. Lederer May 18, 2001 Page 4

We appreciate your consideration of this proposal. In order that we may undertake the Summer 2001 Round on or close to schedule, we would also appreciate your prompt review of this letter. Please call me or Jim O'Loughlin of Mabbett & Associates, Inc., if you have any comments on this letter, or if we can provide any additional information.

Very truly yours,

p'Brien & Gere Engineers, inc

James R. Heckathorne, PE

Vice President

cc:

S. Wood

D. Allen

R. Carey

G. Swenson

E. Bertaut R. Connors

re '

D. Dwight M. Wade

J. O'Loughlin

TABLE 1 SULLIVAN'S LEDGE SUPERFUND SITE LY OF INFLUENT LABORATORY ANALYTICAL RESULTS⁽¹⁾

	Γ												·												· 			
		WATER C				RECOVERY			_	ECOVERY	WELL OB	3-2	R	ECOVERY	WELL OBG	3-3		RECOVER	Y WELL BE	J-1	R	RECOVERY WELL BEI-2			F	ECOVERY	WELL BEI	1-3
	Event #1	Event #2	Event #3	Event #4	Event #1	Event #2	Event #3	Event #4	Event #1	Event #2	Event #3	Event #4	Event #1	Event #2	Event #3	Event #4	Event #1	Event #2	Event #3	Event #4	Event #1	Event #2	Event #3	Event #4	Event #1	Event #2	Event #3	Event #4
Sample Date	12/15/99	1/27/00	6/29/00	03/21/01	12/29/99	1/27/00	6/29/00	3/21/01	12/29/99	1/28/00	6/29/00	3/21/01	12/29/99	1/27/00	6/29/00	3/21/01	(2)	1/27/00	6/29/00	3/21/01	12/29/99	1/27/00	6/29/00	3/21/01	12/29/99	1/27/00	6/29/00	3/21/01
PCBs (ug/l)	2.4	3.2	4.5	LT 0.50	3.7	4.9	10	29.6	5,9	7.6	5.3	1.01	LT 0.50	LT 0.50	LT 0.51	LT 0.50	(2)	2.0	5.2	0.953	8.2	7.8	3.0	LT 0.5	3.3	3.4	4.5	0.867
Benzene (ug/l)	110	110	140	90	290	360	LT 500	270	LT 500	LT 500	400	390	LT 500	66	LT 120	56	(2)	68	LT 500	LT 100	230	LT 250	LT 120	120	LT 5	LT 500	LT 250	LT 50
Toluene (ug/l)	70	190	53	LT 1.5	650	620	970	770	LT 500	LT 500	120	140	LT 500	36	LT 120	LT 75	(2)	360	990	960	2200	940	240	76	LT 5.0	LT 500	LT 250	LT 75
E-Benzene (ug/l)	12	12	21	3.8	750	610	920	720	LT 500	LT 500	86	140	LT 500	LT 25	LT 120	LT 50	(2)	700	1000	1100	4000	1700	430	290	6.7	LT 500	LT 250	LT 50
Xylene (ug/l)	16	16	23	12.1	LT 50	LT 50	LT 500	LT 100	LT 500	LT 500	LT 50	42	LT 500	LT 25	LT 120	LT 50	(2)	LT 50	LT 500	LT 100	87	LT 250	LT 120	LT 50	LT 5.0	LT 500	LT 250	LT 50
TCE (ug/l)	LT 0.5	LT 5.0	LT 5.0	1.4	4000	5400	7400	2100	670	540	350	82	7100	4300	1800	450	(2)	7500	17000	13000	3800	4200	800	160	14000	13000	7200	2600
1.2 DCE (ug/l)	1.9	LT 5.0	LT 5.0	3.1	26000	16000	13000	13000	19000	11000	3200	4800	9200	4900	3500	3600	(2)	21000	11000	12000	77000	30000	8400	7400	590	1400	2900	3400
V.Chloride (ug/l)	LT 1.0	LT 10	LT 10	LT 2.0	1200	820	LT 1000	550	2300	1100	390	430	LT 1000	180	LT 250	180	(2)	650	LT 1000	490	8200	3900	1000	840	17	LT 1000	LT 500	LT 100
Chlorobenzene (ug/l)	100	120	110	72	LT 50	LT 50	LT 500	LT 350	LT 500	LT 500	220	250	LT 500	44	LT 120	LT 180	(2)	LT 50	LT 500	LT 350	80	LT 250	LT 120	LT 180	LT 5.0	LT 500	LT 250	LT 180
Chloroform (ug/l)	LT 0.50	LT 5.0	LT 5.0	LT 1.5	LT 50	LT 50	LT 500	LT 150	LT 500	LT 500	LT 50	LT 38	LT 500	LT 25	LT 120	LT 75	(2)	LT 50	LT 500	LT 150	LT 50	LT 250	LT 120	LT 75	LT 5.0	LT 500	LT 250	LT 75
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Acetone (ug/l)	LT 10	LT 100	LT 100	LT 10	LT 1000	LT 1000	LT 10000	LT 1000	LT 10000	LT 10000	LT 1000	LT 250	LT 10000	LT 500	LT 2500	LT 500	(2)	LT 1000	LT 10000	LT 1000	LT 1000	LT 5000	LT 2500	LT 500	LT 100	LT 10000	LT 5000	LT 500
Acrolein (ug/l)	NA NA	NA	LT 5.0	LT 25	NA.	NA	LT 500	LT 2500	NA NA	NA.	LT 50	LT 620	NA .	NA	LT 120	LT 1200	(2)	NA	LT 500	LT 2500	NA	NA	LT 120	LT 1200	NA	NA	LT 250	LT 1200
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Arsenic (mg/l)	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005		LT 0,005	LT 0.005	LT 0.005	LT 0.005	(2)	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	0.012	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005
Cadmium (mg/l)	LT 0.01	LT 0.01	LT 0.01	LT 0.005	LT 0.01	LT 0.01	LT 0.01	LT 0.005	LT 0.01	LT 0.01	LT 0.01	LT 0.005	LT 0.01	LT 0.01	LT 0.01	LT 0.005	(2)	LT 0.01	LT 0.01	LT 0.005	LT 0.01	LT 0.01	LT 0.01	LT 0.005	LT 0.01	LT 0.01	LT 0.01	LT 0.005
Chromium (mg/l)	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	(2)	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01
Chromium (VI) (mg/l)	LT 0.02	LT 0.01	NA NA	NA .	LT 0.01	LT 0.01	NA .	NA.	LT 0.01	LT 0.01	NA.	NA .	LT 0.01	LT 0.01	NA.	NA NA	(2)	LT 0.01	NA NA	NA .	LT 0.01	LT 0.01	NA.	NA.	LT 0.01	LT 0.01	NA .	NA NA
Canada (mar/l)	LT 0,01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	ŁT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	0.03		LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01				1.7.7.
Copper (mg/l) Cyanide (mg/l)	0.09	0.062	NA NA	NA NA	0.16	0.16	NA NA	NA NA	0.18	0.12	NA NA	NA NA	0.02	0.028	NA	NA NA	(2)	0.019	NA NA	NA NA	0.01	0.049	NA NA	NA NA	LT 0.01	LT 0.01	LT 0.01	LT 0.01
Iron (mg/l)	NA NA	86	79	83	NA NA	41	40	46	- NA	71	74	73	NA NA	41	53	53	(2)	26	47	45	NA NA	55	210	58	NA NA	1.4	0.88	1.3
Lead (mg/l)	LT 0.005	LT 0.005	LT 0 005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT 0.005	LT.005	LT 0.005	LT 0.005		LT 0.005	LT 0.005	LT 0.005	0.016	(2)	LT 0.005	_	LT 0.005	LT 0.005	0.022	0.006	LT 0.005	LT 0.005	LT 0.005	LT 0.005	+
(2. 5.555	2. 5.555	1		2. 0.000	2. 5.555				0.0.0	\ <u>``</u>	2, 5.565			21 0.000	U.U.Z	0.000	2.0.003	21 0.003	21 0.003	21 0.003	2, 5.505
Manganese (mg/l)	NA NA	1.8	1,4	1.8	NA.	9.7	8.6	7.9	NA NA	6.9	5.8	6.5	NA.	8,9	. 9.8	8.3	(2)	4,4	10	10	NA.	9.2	7.9	7.8	NA.	1.6	3 5	5.3
Mercury (mg/l)	LT 0.0002	LT 0.0002	NA	LT 0.0005	LT 0.0002	LT 0.0002	NA NA	LT 0.0005	LT 0.0002	LT 0.0002	NA	LT 0.0005		LT 0.0002	NA.	LT 0.0005	(2)	LT 0.0002	NA	LT 0.0005	LT 0.0002	LT 0.0002	NA	LT 0.0005	LT 0.0002		NA NA	LT 0.000
Molybdenum (mg/l)	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.03	LT 0.05	LT 0.05	LT 0.05	(2)	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05	0.06	LT 0.05	LT 0.05	LT 0.05	LT 0.05	LT 0.05
Nicket (mg/l)	LT 0.05	LT 0.05	LT 0.05	LT 0.025	LT 0.05	LT 0.05	LT 0.05	LT 0.025	LT 0.05	LT 0.05	LT 0.05	LT 0.025	LT 0.05	LT 0.05	LT 0.05	LT 0.025	(2)	LT 0.05	LT 0.05	LT 0.025	LT 0.05	LT 0.05	LT 0.05	LT 0.025	LT 0.05	LT 0.05	LT 0.05	LT 0.025
						L													L									
Silver (mg/l)	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	(2)	LT 0.01	LT 0.01	LT 0.01	!.T 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01	LT 0.01
Zinc (mg/l)	LT 0.01	LT 0.01	0 01	0.07	LT 0.01	0.02	0.02	LT 0.05	LT 0.01	LT 0.01	LT 0.01	LT 0.05	LT 0.01	0.01	LT 0.01	0.15	(2)	LT 0.01	LT 0.01	0.06	LT 0.01	LT 0.01	LT 0.01	LT 0.05	0.01	0.02	0.81	0.14
·						ļ			<u></u>			ļ	L		L		L	<u> </u>	ļ	ļ	L	ļ						
SVOC'S (ug/l)	63	70	NA	73.1	79	55	NA .	122.5	217	255	NA.	371.3	ND	18	NA	16	(2)	68	NA .	67.9	101	72	NA NA	74.2	ND	ND	NA	ND
	⊢ ↓							<u></u>	<u> </u>								<u> </u>	 	ļ				ļ	 	ļ			
Pesticides	NA NA	NA	ND	NA NA	NA .	NA NA	ND	NA_	NA_	NA	ND	NA_	NA.	NA NA	ND	NA NA	(2)	NA .	ND	NA NA	NA .	NA	ND	NA NA	NA NA	NA:	ND	NA NA
					L	<u> </u>						L	L	L	L	L	Ь		<u> </u>	L	L	L		L	L			

- Notes:

 1. Samples for events 1, 2, and 3 collected by OBG Operations and analyzed by OBG Laboratories. Samples for event 4 collected by Mabbett & Associates, Inc. and analyzed by Alpha Analytical Labs

 2. Well inoperative on day of sampling

 3. TTO less than 2000 ug/l

 4. Constituent specific

 5. ND = Not Detected

 6. NA = Not Analyzed

 7. LT = Less Than

Compiled by Mabbett & Associates, Inc. for O'Brien & Gere Engineers, Inc. 20015Table 1

TABLE 2 SULLIVAN'S LEDGE SUPERFUND SITE GROUNDWATER ANALYSIS

ORGANIC COMPOUND SUMMARY(1) PROPOSED ANALYTICAL PROGRAM FOR SUMMER 2001 ROUND (2)

Monitoring Well		Location		ile Organic ((ug/l)	Compounds	To	otal PCBs (ug	3/I)		tai Semivola c Compound		TAL	Metals
	Set ^{Pl}	Group	Winter 1999	Spring 2001	Summer 2001	Winter 1999	Spring 2001	Summer 2001	Winter 1999	Spring 2001	Summer 2001	Spring 2001	Summe 2001
MW - 16	В	Overburden	5.1	ND								***	2001
MW - 15	В	Overburden	14.5	126.9	XX	0.90	ND:	XX	ND	ND.		Yes	XX
MW - 14	В	Overburden	639.5	965.0	XX	1.50	3.70	<u>xx</u>	8.8	6.0		Yes	XX
ECJ-3 (51)	8	Shallow Bedrock	NS NS		XX	0.83	ND	XX	91.6	63.1		Yes	XX
ECJ-3 (91)	B	Shallow Bedrock	NS NS	15.0 ND		NS	ND		NS	ND		Yes	
MW - 24	В	Shallow Bedrock	3843.3	6530.0		NS	ND		NS	ND		Yes	
MW - 2	В	Shallow Bedrock	3440.0		X	47.00	36.70	x	66.9	39.8		Yes	
ECJ-3 (126)	В.	Intermed Bedrock		2181.0	XX	17.00	8.61	XX	134.6	47.5		Yes	
200-0 (120)		Intermed Bedrock	NS	ND		NS	_ ND		NS	ND		Yes	
MW - 13A	Ā	Overburden	28.8	10.2	x	0.31	ND						
MW-12AR	A	Overburden	NS.	205.5	x l	NS	UN DN		ND	ND		Yes	X
MW - 22A	Α.	Overburden	1782.0	539.2	- x 	25,20	ND ND		NS	47.9		Yes	X
MW - 13	A	Shallow Bedrock	991.6	7.1	- xx 	0.26	ND ND	X	2231.3	229.7		Yes	Х
MW - 17	A	Shallow Bedrock	36.4	1.2	 	ND	ND		ND	ND ND		Yes	
MW - 12	A	Shallow Bedrock	104.1	NS.	- x - l	0.27	NS NS		15.0	ND ND		Yes	
GCA - 1	A	Shallow Bedrock	13946.0	172.9	- î	14.00			25.8	NS		NS	
ECJ 1 (37)	A	Shallow Bedrock	2297.6	109.0	- x	1.10	ND 205	X	247.4	26.6		Yes	
ECJ 1 (62)	A	Shallow Bedrock	72950.1	9410.0	- x	0.52	2.85 0.75	XX	36.1	ND		Yes	
ECJ 1 (72)	A	Shallow Bedrock	145337.1	26780.0	$-\hat{\mathbf{x}}$			XX	118.0	ND		Yes	
ECJ 1 (122)	Α	Intermed Bedrock	71911.5	8532.0	- î	ND ND	ND		152.4	21.0		Yes	
ECJ 1 (148)	A	Intermed Bedrock	36477.2	74600.0	 	ND 0.44	ND ND		100.5	188.9		Yes	
ECJ 1 (267)	A	Deep Bedrock	160.5	52.1	-î l	ND ND	ND ND		109.4	182.6		Yes	
			7000			ND ND	ND		5.9	ND		Yes	
MW - 6A	Ċ	Overburden	1835.1	314.5	- x	0.12	ND	×	4.6				
MW - 4A	C	Overburden	1.8	ND	x	ND ND	ND	^	ND	ND		Yes	X
MW-5A	C	Overburden	ND	ND	x	ND	ND		ND	ND		Yes	X
MW - 6	С	Shallow Bedrock	4837.2	2950.0	x	ND	ND		5.6	ND		Yes	X
ECJ 2 (47)	С	Shallow Bedrock	2533.0	1920.0	x	ND	ND		3.2	ND ND		Yes	
MW - 4	C	Shallow Bedrock	1271.9	1034.2	X	ND	ND	i	ND ND	ND ND		Yes	
MW - 5	СС	Shallow Bedrock	ND	6.8	x	ND	ND		ND ND	ND ND		Yes	
ECJ 2 (82)	С	Intermed Bedrock	15942.0	16080.0	- x -	ND	ND		4.4	ND		Yes	
ECJ 2 (117)	С	Intermed Bedrock	55380.0	29730.0	x	ND	ND		8.8	ND ND		Yes	
ECJ 2 (152)	С	Intermed Bedrock	400.4	4594.0	x	ND	ND		ND	9.0		Yes	
ECJ 2 (187)	С	Deep Bedrock	3605.8	4440.0	x	ND	ND		2.6	9.8		Yes	
									4.0	3.8		Yes	
MW-10A	D	Overburden	NS	8.6	XX	NS	ND		NS	ND		Yes	 _
MW-8A	D	Overburden	ND	ND		ND	ND		ND	ND	+	Yes	X
MVV-10	D	Shallow Bedrock	NS	12.9	XX	NS	ND		NS	ND		Yes	
MW-10B	D	Shallow Bedrock	NS	13.6	XX	NS	ND		NS	ND			
MW-8	D	Shallow Bedrock	ND	ND		ND	ND		ND	ND		Yes Yes	
ECJ 4 (62)	D	Shallow Bedrock	0.6	ND	7	ND	ND		ND	ND		Yes	
ECJ 4 (87)	D	Intermed Bedrock	0.6	0.7		ND	ND		ND	ND		Yes	
ECJ 4 (132)	D	Intermed Bedrock	1.5	ND		ND	ND		ND	ND		Yes	
ECJ 4 (162)	D	Intermed Bedrock	15.7	11.8		ND	ND		3.5	ND		Yes	
ECJ 4 (227)	D	Deep Bedrock	7.0	4.3		ND	ND		ND	ND			
ECJ 4 (245)	D	Deep Bedrock	15.4	5,1		ND	ND	 +	ND	ND	 -	Yes Yes	

- Notes:

 1. Winter 1999 samples collected by O'Brien & Gere Engineers, Inc. and analyzed by OBG Laboratories.

 Spring 2001 samples collected by Mabbett & Associates, Inc. and analyzed by Alpha Analytical, Inc.

 "X" indicates analysis originally proposed in O'Brien & Gere Engineers, Inc. letter dated June 26, 2000 based on results of Winter 1999 Round.

 "XX' indicates additional proposed analysis.

 Cod & Total College 2000 based on the control of the con
- 3. Set A = Inside Disposal Area, immediately downgradient of disposal pit.

 - Set D = Disposal Pice, allineulating downignation of disposal pit.

 Set B = Inside Disposal Area, immediately upgradient of disposal pit.

 Set C = Outside Disposal Area, within 300 feet of Disposal Area.

 Set D = Outside Disposal Area, greater than 300 feet from Disposal Area (downgradient).



REGION 1

1 CONGRESS STREET, SUITE 1100 BOSTON, MASSACHUSETTS 02114-2023

June 22, 2001

JUN 6 9 7000

Mr Jim Heckathorne O'Brien and Gere Engineers OU 1 Project Coordinator Sullivan's Ledge Superfund Site PO Box 4873 5000 Brittonfield Parkway Syracuse, NY 13221

Re: Response to May 18, 2001 request to modify Sullivan's Ledge GW Monitoring Program

Dear Jim:

Thank you for your letter dated May 18,2001 in which you requested modification of the groundwater monitoring program for the Sullivan's Ledge Site on behalf of the Sullivan's Ledge group.

I have discussed this matter with both Steve Wood and Jim O'Loughlin and agreed that the semi-volatile constituents can be deleted from this round of sampling (Summer 2001) because they are less mobile than other constituents, have not been found in very high concentrations, and the resulting data are not related to performance standards for operation of the groundwater treatment plant. I have discussed this modification with Bob Carey of the City of New Bedford and he has no objections to this change. EPA, after consultation with the MA DEP has determined that the SVOC sampling for the summer 2001 round is not required per Section V.C.2(h) of the OU I Statement of Work.

However, at this time EPA can not approve the remainder of the proposal to scale back the monitoring protocol as specified in the SOW.

In addition, EPA and DEP would like to discuss the identification of the OU1 and O&M CD points of compliance for groundwater with the Sullivan's Ledge Site Group and the City of New Bedford. Any future plan for modifying the monitoring program should take into consideration these compliance points and the need for determination of eventual compliance with the groundwater performance standards.

Please let me know if you wish to discuss this matter by calling me at 617-918-1325.

Sincerely,

David O. Lederer

Remedial Project Manager

cc: Jim O'Loughlin, Mabbett and Associates

Bob Carey, CNB

Steve Wood, OU I PMC Dorothy M. Allen, MA DEP

Edgard Bertaut, OU I PMC Chairman

Don Dwight, M&E Leann Jensen, EPA



July 20, 2001

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Mr. David O. Lederer
Remedial Project Manager
Environmental Protection Agency (HBO)
Region 1
1 Congress Street, Suite 1100
Boston, MA 02114-2023

Re:

Sullivan's Ledge Superfund Site

Summer 2001 Groundwater Sampling Event

O'Brien & Gere Engineers, Inc.

Syracuse, NY

Project No. 20015.01

Dear Dave:

On behalf of O'Brien & Gere Engineers, Inc., the purpose of this letter is to confirm our conversations on July 10, 11 and 12 concerning the analysis of certain Sullivan's Ledge groundwater samples for PCBs.

In order to maintain the long-term seasonal schedule, the Summer 2001 round of groundwater sampling was initiated on June 13, 2001, prior to meeting with USEPA regarding O'Brien & Gere's letter dated May 18, 2001, which had requested revisions to the scope of the program. Wells for which no program revisions were proposed were sampled first. Samples from the remaining wells were collected for PCB and metals analysis and were placed on hold pending USEPA's final decision concerning the scope of the analytical program.

The scope of the analytical program was discussed with USEPA, MADEP, and Metcalf & Eddy on June 18, 2001 and again on June 20, 2001. During the June 20 conference call, USEPA made a final decision concerning the scope of the analytical program, and indicated that although SVOCs could be deleted from the Summer 2001 sampling event, PCBs and metals could not. This decision was summarized in a USEPA letter dated June 22, 2001. Mabbett & Associates, Inc. (M&A) contacted the laboratory (Alpha Analytical Labs) on June 19 requesting extraction of PCB samples to avoid missing the seven day holding time, and again on June 21 to indicate that the samples should be analyzed.

Laboratory data packages became available for review during the week of July 2, 2001. On July 6, data received to date was reviewed by M&A, and it was discovered that certain samples had not been analyzed for metals and PCBs. On July 10, the laboratory confirmed that PCB and metal samples collected on June 18 had not been analyzed; on July 11, the laboratory confirmed that PCB and metal samples collected on June 15 had not been analyzed. It became apparent as a result of the discussions that the laboratory was tracking the work on a batch basis versus a site-wide basis, and that the laboratory understood the instructions to extract and analyze to only apply to samples collected on June 13 and 14 (which were provided to the lab in one batch), and not to samples collected on June 15 and June 18. As a result of the mis-understanding, samples from the following wells had not been analyzed for metals or PCBs: MW-4, MW-4A, MW-5, MW-5A, MW-6A, MW-6A, MW-13, MW-13A, MW-10, MW-10A, MW-10B, MW-17, MW-22A, and ECJ-2 (187').

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Mr. David O. Lederer July 20, 2001 Page 2 of 2

On July 10, the laboratory was instructed to analyze all held samples for metals. However, the seven day holding time for PCBs had been exceeded. The situation was discussed with USEPA on July 10, and an offer was made to run the samples despite the lapsed holding time. On July 11, USEPA indicated by e-mail not to run the PCB samples with the lapsed holding time. On July 12, USEPA was informed of the final list of samples with lapsed holding times (i.e., 14 wells total as listed in the previous paragraph). As shown on the attached summary, 20 PCB samples have been collected and analyzed to date. Eight more samples will be collected from MW-8, MW-8A, and ECJ-4, which are the wells on the golf course between the 6th and 17th fairways, for a total of 28. With respect to these later wells, we have had discussions with the City of New Bedford concerning providing safe access to sample these locations and provided a proposal to temporarily relocate the tees on July 5, 2001. We are waiting for a response from the City and the golf course management. Our hope is to sample these wells as soon as possible.

A conference call was held with the laboratory on July 12 concerning the mis-understanding. It was agreed that additional measures would be taken in the future to coordinate sample tracking and analysis, including the provision of site-wide work lists, tracking analytical progress on a site-wide basis, and the use of written instructions (e.g., e-mail). Based on these corrective measures, we do not anticipate a re-occurrence of this problem.

We appreciate your attention to this matter. Please contact me or Jim Heckathorne at O'Brien & Gere if we can provide any further information.

Very truly yours,

MABBETT & ASSOCIATES, INC.

BY:

James M. O'Loughlin, P.E., LSP

Senior Project Manager

JMO/tw

cc:

S. Wood

D. Allen

J. Occhialini R. Carey

J. Heckathorne

E. Bertaut

D. Buckley

K. O'Brien

R. Connors

D. Dwight

JMO, MAS, (MF/RF)

df:

ANM, DAC, PDS

Sullivan's Ledge Site Group Project Management Committee

Stephen Wood 272 West Exchange Street, Suite 101 Providence, RI 02903 Telephone (401) 421-0398 Ext. 130 Fax (401) 421-5731 swood@essgroup.com

November 1, 2001

Mr. David O. Lederer Remedial Project Manager Environmental Protection Agency Region 1 1 Congress Street, Suite 1100, (HBO) Boston, MA 02114-2023

RE: Westbay Monitoring Well ECJ-3

Dear Mr. Lederer:

As you are aware, during the Baseline Groundwater Monitoring sampling conducted in the winter of 1999, monitoring well ECJ-3 was found to be blocked by an obstruction. Harding ESE, at the PMC's request, attempted to ascertain the nature of the blockage and to remove it. As described in the attached memo from Harding ESE dated October 17, 2001, they were able to clear the well to a depth of approximately 221 feet. During the September 2001 sampling event, Mabbett & Associates was able to sound the well to a depth of 235 feet and sample the upper four ports.

O'Brien & Gere, at the request of the PMC, reviewed the information available regarding ECJ-3 and provided the attached letter dated October 18, 2001. Based on their review, O'Brien & Gere has recommended for a number of reasons outlined in their letter, no further action be taken to clear the well and that replacement is not warranted or justified.

After review of the above correspondence from Harding ESE and O'Brien & Gere, the PMC is in agreement with O'Brien & Gere's recommendation and therefore plans no further action to clear monitoring well ECJ-3 or to replace the well.

Please feel free to call me at (401) 421-0398 extension 130 if you have any questions.

Sincerely

Stephen Wood

Project Management Committee

Attachment

cc:

R. Connors - PMC

J. O'Loughlin - M&A

E. Bertaut - PMC

J. Heckathorne - OBG Syracuse

E. Vaughan, DEP

G. Olson, Esq.- P&D



October 18, 2001

Mr. Stephen B. Wood Sullivan's Ledge Site Group c/o ESS 272 West Exchange Street, Suite 101 Providence, RI 02903

Re: Sullivan's Ledge Superfund Site

Westbay Monitoring Well ECJ-3 File: 5509.005 #2

Dear Steve:

We are writing concerning the attached recommendation from Harding-ESE concerning Westbay monitoring well ECJ-3.

As you are aware, ECJ-3 is located in the southwest corner of the Disposal Area, and is an upgradient well. The upper casing of this well was extended by approximately 12 ft during construction of the Disposal Area cap. Historically, six ports in ECJ-3 have been monitored. Approximate port depths, both before and after casing extension, are as follows:

Port Depth (ft)

— •	· F (**)
Prior to Extension	Current Depth
51	63
91	103
126	138
146	158
236	
271	248
2/1	283

As discussed in the report entitled "Post-Construction Baseline Ground Water Sampling Event" (O'Brien & Gere, April 2000), it became apparent during the winter of 1999 that ECJ-3 had been blocked by an obstruction. As described in the attached memorandum dated October 17, 2001, Harding-ESE has made multiple attempts to clear the obstruction, with the result that on July 18, 2001, Harding-ESE indicated that ECJ-3 was clear to depth of approximately 221 ft, but that a 50-ft rod with a length of rope remained lodged in the well.

Mabbett & Associates, Inc. (M&A) sounded the well on September 18, 2001, and was able to sound to a depth of approximately 235 ft. Although M&A was able to sample the upper four ports during the Fall 2001 sampling event, the lower two ports of ECJ-3 were not clear for sampling. Note that because a string of Westbay sample bottles can vary in length from 3 to 6 ft, it would be necessary for ECJ-3 to be cleared to a depth of approximately 251 ft to be able to sample the next port.



Mr. Stephen B. Wood October 18, 2001 Page 2

As discussed in Harding-ESE's memorandum, further efforts to clear the well do not appear feasible. Moreover, further efforts to clear the well could result in damage to the well, or in upper ports being blocked if the rod becomes re-lodged higher in the well during removal attempts. As indicated in past correspondence to EPA, because ECJ-3 is an upgradient well, and contains relatively low concentrations of site contaminants, it is unlikely that the data from ECJ-3 will be used to make remedial decisions. Based on these factors, O'Brien & Gere recommends that no further action be taken to clear ECJ-3. Further efforts, even if successful, would result in the generation of data of little, if any value. Likewise, replacement of the well is not warranted or justified.

Please contact me or Jim O'Loughlin (781-275-6050) if we can provide any additional information concerning this issue. Otherwise, please forward this recommendation to EPA.

Very truly yours,

Ø'BRIEN & GERE ENGINEERS, INC.

James R. Heckathorne, PE

Vice President

 $I:\DIV71\Projects\S509005\2_correspondence\WOOD-201.doc$ Attachment

cc:

E. Bertaut

J. O'Loughlin

R. Connors

G. Swenson

Harding ESE

Sullivan's Ledge #C47968 New Bedford MA

October 17, 2001

Memo

To:

Jim Heckathorne

O'Brien & Gere

From: R. Travis Canon A. Travis Canon
Project Engineer A. Travis Canon

Subject

ECJ-3: Unknown Object, Pipe, and Rope in Well

On three different occasions, October 4, 2000, Feb-March 2001, and July 16-17, 2001, Harding ESE attempted to discover and remove an unknown object stuck in well ECJ-3 at 48-49 ft. Below is a bulleted list of these three attempts:

- On the first attempt, Harding mostly poked and prodded on the object with no noticeable effect in moving it. This attempt was mostly exploratory in nature.
- On the second attempt, Harding was successful in dislodging the object and pushing it to the bottom of the well. Techniques and tools used in combination to dislodge this object were downhole video camera, flushing the well, banging on it, and finally using a ceramic bit welded onto 50 ft of 1/2-inch, threaded steel pipe used as a drill. Initially the object broke up, sank 20-30 ft, and jammed. With the 50 ft of pipe attached to nylon rope, the field crew chased the object to the bortom of the well. Unfortunately the 1/2-inch pipe stuck in the well at about 200 ft and again at 250

Harding was unsuccessful in moving the pipe up or down and eventually snapped the rope with a backhoe, leaving the 50 ft of pipe and about 100 ft of rope at the bottom of the well. Afterwards, Harding was able to remove about 25 ft of rope in two days before ceasing work. Top of rope was estimated to be at 190-200 ft deep. ECJ-3 was video taped, transmittal T-190, to check for damage and blockages; none were observed.

On the third attempt, Harding's main objective was to remove more rope in an effort to unblock a sampling port. The crew removed about 25-35 ft of rope, leaving top of rope at about 221 ft down the well. The 50 ft of pipe and about 45 ft of rope remain in the well.

In early October 2001, a Mabbett field crew sounded the well to a depth of approximately 235 ft.

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10/17/01

Harding does not believe it is feasible or productive to try to remove the steel pipe. The overlying rope is not strong enough to move it (even an inch), and the rope breaks into 5-8 ft pieces when pulled on by a backhoe. Even if the length of rope were removed, it would be difficult to larch onto the top of the eye bolt at the top of the pipe, due to the knots for the rope. Harding ESE is also concerned about the potential to damage the well by contiming to attempt to physically remove the pipe.

CC: Jim O'Loughlin, Mabbett Jerry Johnson, Harding ECJ-3 File

Appendix B

Ground water elevation data

Mabbett & Associates, Inc.
Environmental Consultants & Engineers

June 29, 2001

Mr. James Heckathorne, P.E. Vice President O'Brien & Gere Engineers, Inc. P.O. Box 4873 Syracuse, NY 13221 5 Alfred Circle Bedford, Massachusetts 01730-2346 Tel: (781) 275-6050 Fax: (781) 275-5651 info@mabbett.com www.mabbett.com

Re:

Sullivan's Ledge Superfund Site Groundwater Elevation Data O'Brien & Gere Engineers, Inc. Syracuse, NY Project No. 20015.08

Dear Jim:

Pursuant to O'Brien & Gere's letter to the PMC dated June 6, 2001, Mabbett & Associates, Inc. (M&A) collected a round of groundwater elevation data at the Sullivan's Ledge Superfund Site between June 12 and 13, 2001.

Measured depths to groundwater for conventional wells are shown on Table 1. Groundwater elevations for the conventional wells were calculated as shown on Table 2, using survey information provided by HLA, which was presented in our letter dated March 20, 2001. Measurements and calculations for the Westbay wells are provided on Table 3. These tables were also e-mailed to Guy Swenson on June 20 and June 21, 2001.

Please call me if I can provide any further information, or if you have any questions concerning the collected data.

Very truly yours,

MABBETT & ASSOCIATES, INC.

11)

James M. O'Loughlin, P.E., LSP

Serior Project Manager

JMO/tw

Enclosure:

Table 1 - Depth to Groundwater - Conventional Wells

Table 2 – Groundwater Elevations – Conventional Wells

Table 3 – Westbay Well Groundwater Elevations

cc:

S. Wood

G. Swenson

E. Bertaut

JMO, MAS (MF/RF)

R. Connors

df:

DAC, PDS

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Table 1
Sullivan's Ledge Superfund Site
Depth to Groundwater - Conventional Wells
June 12, 2001

Well ID	Date of	Depth to Water (ft)		Weil	
	Measurement	PVC	Casing	Stick-up (ft)	Notes and Comments
GCA-1	6/12/01	N/A	7.30	2.00	No PVC
MW-2	6/12/01	N/A	15.90	2.30	No PVC
MW-4	6/12/01	N/A	7.75	2.40	No PVC
MW-4A	6/12/01	7.63*	7.90	2.30	1,01,10
MW-5	6/12/01	N/A	6.78	2.70	No PVC
MW-5A	6/12/01	6.00*	6.40	2.10	1,01,10
MW-6	6/12/01	N/A	4.80	2.90	No PVC
MW-6A	6/12/01	4.45*	5.20		1101 40
MW-8	6/12/01	N/A	2.80		No PVC
MW-8A	6/12/01	3.49*	3.57	2.20	
MW-10	6/12/01	N/A	1.20	1.10	No PVC
MW-10A	6/12/01	2.94	N/A	3.30	1,01,40
MW-10B	6/12/01	N/A	1.43	1.20	No PVC
MW-12	6/12/01	N/A	-	1.90	Obstruction in well at 6'
MW-12A	6/12/01	- 6.67		2.00	Obstruction in well at 0
MW-12AR	6/12/01	7.55*	7.85	3.10	
MW-13	6/12/01	N/A	11.75		No PVC
MW-13A	6/12/01	11.58*	11.80	2.90	1,01,0
MW-14	6/12/01	15.55*	15.75	2.60	
MW-15	6/12/01	18.10*	18.40	2.70	
MW-16	6/12/01	19.85*	19.95	2.60	
MW-17	6/12/01	15.21*	15.21	3.20	
MW-22A	6/12/01	8.05*	8.80	1.40	
MW-24	6/12/01	N/A	17.70	2.40	No PVC
PZ-1	6/12/01	2.98			
PZ-2	6/12/01	2.61		•	
PZ-3	6/12/01	3.08		-	
PZ-6	6/12/01	4.58	1	-	
PZ-10	6/12/01	8.35*	9.04	2.30	
PZ-11	6/12/01	2.38*	2.65	2.00	
PZ-12	6/12/01	5.36*	5.70	1.50	
PZ-13	6/12/01	2.16*	3.58	2.50	
PZ-14A	6/12/01	9.40*	9.70	2.40	
PZ-15A	6/12/01	8.38*	8.60	2.40	

Notes:

- 1. Measured by Mabbett & Associates, Inc. on dates indicated.
- 2. * = Measurement to top of casing, less difference between top of casing and top of PVC.

Table 2
Sullivan's Ledge Superfund Site
Groundwater Elevations - Conventional Wells
June 12, 2001

Well	Top of Casing Elevation	Reference Point	Source	Depth to Water	Date	Groundwater Elevation	Notes
GCA-1	84.06	Plastic Cap	SITEC 3/06/01	7.30	6/12/01	70.70	
MW-2	101.81	Plastic Cap	SITEC 3/06/01	15.90	6/12/01	76.76	(1)
MW-4	90.23	Top pipe	DANSON 98	7.75	6/12/01	85.91	(1)
MW-4A	90.18	Top of PVC	DANSON 98	7.63	6/12/01	82.48	
MW-5	82.34	Top pipe	DANSON 98	6.78		82.55	
MW-5A	82.82	Top of PVC	DANSON 98	6.00	6/12/01	76.04	
MW-6	73.89	Top pipe	DANSON 98	4.80	6/12/01	76.34	
MW-6A	73.33	Top of PVC	DANSON 98	4.45	6/12/01	69.09	
MW-8	70.05	Top pipe	DANSON 98	2.80	6/12/01	68.88	
MW-8A	76.19	Top of PVC	DANSON 98	3.49	6/12/01	67.25	
MW-10	68.28	Top pipe	DANSON 98	1.20	6/12/01	72.70	
MW-10A	70.54	Top of PVC	SITEC 3/06/01	2.94	6/12/01	67.08	
MW-10B	68.42	Top pipe	DANSON 98		6/12/01	67.60	
MW-12	83.91	Top of PVC	SITEC 3/06/01	1.43	6/12/01	66.99	
MW-12A	84.15	Top of PVC	SITEC 3/06/01	6.67	6/12/01	 	(2)
MW-12AR	85.04	Top of PVC			6/12/01	77.48	
MW-13	89.49	Plastic Cap	SITEC 3/06/01 SITEC 3/06/01	7.55	6/12/01	77.49	
MW-13A	89.48	Top of PVC	SITEC 3/06/01	11.75 11.58	6/12/01	77.74	(1)
MW-14	101.46	Top of PVC	SITEC 3/06/01	15.55	6/12/01	77.90	
MW-15	112.31	Top of PVC	SITEC 3/06/01	18.10	6/12/01 6/12/01	85.91	
MW-16	120.55	Top of PVC	SITEC 3/06/01	19.85		94.21	
MW-17	92.56	Top of PVC	SITEC 3/06/01	15.21	6/12/01 6/12/01	100.70	
MW-22A	85.00	Top of PVC	SITEC 3/06/01	8.05		77.35	
MW-24	112.23	Plastic Cap	SITEC 3/06/01		6/12/01	76.95	
19177-2-7	112.20	riasiic Cap	311EC 3/00/01	17.70	6/12/01	94.53	(1)
PZ-1	66.73	Top of PVC	SITEC 3/06/01	2.00	C(40/04		···
PZ-2	65.91	Top of PVC	SITEC 3/06/01	2.98 2.61	6/12/01	63.75	
PZ-3	65.91	Top of PVC	SITEC 3/06/01	3.08	6/12/01	63.30	
PZ-6	68.06	Top of PVC	SITEC 3/06/01		6/12/01	62.83	
PZ-10	85.72	Top of PVC	SITEC 3/06/01	4.58 8.35	6/12/01 6/12/01	63.48	
PZ-11	73.79	Top of PVC	SITEC 3/06/01			77.37	·
PZ-12	82.46	Top of PVC	SITEC 3/06/01	2.38 5.36	6/12/01	71.41	· · · · · · · · · · · · · · · · · · ·
PZ-13	73.28	Top of PVC	SITEC 3/06/01		6/12/01	77.10	
PZ-West (14A)	86.73	Top of PVC		2.16	6/12/01	71.12	
PZ-East (15A)	85.98	Top of PVC	SITEC 3/06/01 SITEC 3/06/01	9.40	6/12/01	77.33	
· = 283((13A)	03.30	10p of PVC	31120 3/00/01	8.38	6/12/01	77.60	
ECJ-1	89.81	Top of PVC	SITEC 2/06/04	<u></u>			(0)
ECJ-2	72.38	Top of PVC	SITEC 3/06/01 DANSON 98	-			(3)
ECJ-3	120.74	Top of PVC		•	-	<u> </u>	(3)
ECJ-4	70.59	Top of PVC	SITEC 3/06/01	-	<u> </u>		(3)
LUJ-4	70.58	TOP OF PVC	DANSON 98	•	-		(3)

Notes

- 1. Survey elevation is top of PVC cap associated with low flow equipment; depth to groundwater is from top of casing. As a result, actual groundwater elevation is 0.05 to 0.01 ft lower than shown.
- 2. No DTW measurement taken. Installed tubing prevents measurement.
- 3. See Table 3 for information on Westbay wells.

Table 3 Sullivan's Ledge Superfund Site Westbay Well Groundwater Elevations June 12 and 13, 2001

Well	Depth Log (ft)	Depth Cable (ft)	P _i (psi) ⁽¹⁾	P _o (psi) ⁽¹⁾	ΔH (ft)	D _{MP} (ft) ⁽¹⁾	D _z (ft)	E _{MP} (ft) ⁽²⁾	PL (ft) ⁽³⁾
ECJ-1	37	41	25.92	26.28	0.83	14.77	13.94	89.81	75.87
ECJ-1	62	66	36.82	36.68	-0.32	14.77	15.09	89.81	74.72
ECJ-1	72	76	41.20	36.25	-11.42	14.77	26.19	89.81	63.62
ECJ-1	122	126	63.02	57.48	-12.78	14.77	27.55	89.81	62.26
ECJ-1	148	151	73.92	67.83	-14.05	14.77	28.82	89.81	60.99
ECJ-1	267	272	126.12	129.39	7.54	14.77	7.23	89.81	82.58
							20	- 00.01	02.50
ECJ-2	47	47	32.12	33.60	3.41	8.00	4.59	72.38	67.79
ECJ-2	82	82	47.30	47.29	-0.02	8.00	8.02	72.38	64.36
ECJ-2	117	117	62.31	64.32	4.64	8.00	3.36	72.38	69.02
ECJ-2	152	152	76.80	79.52	6.27	8.00	1.73	72.38	70.65
ECJ-2	187	187	90.67	93.36	6.21	8.00	1.79	72.38	70.59
						0.00		72.50	70.55
ECJ-3	51	62	19.85	31.21	26.21	52.46	26.25	120.74	94.49
ECJ-3	91	103	36.83	42.24	12.48	52.46	39.98	120.74	80.76
ECJ-3	126	138	52.57	63.50	25.21	52.46	27.25	120.74	93.49
								120.74	33.43
ECJ-4	62	62	33.12	40.37	16.72	21.55	4.83	70.59	65.76
ECJ-4	87	87	44.02	51.27	16.72	21.55	4.83	70.59	65.76
ECJ-4	132	132	63.65	70.96	16.86	21.55	4.69	70.59	65.90
ECJ-4	162	162	76.70	83.95	16.72	21.55	4.83	70.59	65.76
ECJ-4	227	228	104.74	111.95	16.63	21.55	4.92	70.59	65.67
ECJ-4	247	244	111.15	NS	NA	21.55	NA NA	70.59	NA

Notes:

- 1. Measured by Mabbett & Associates on March 1, 2001.
- 2. Top of casing provided by HLA based on SITEC survey for ECJ-1 and ECJ-3, and based on Danson survey for ECJ-2 and ECJ-4.
- 3. Calculated by Mabbett & Associates, Inc. based on procedure provided by Westbay.

P_i = Pressure reading inside measuring port casing

Po = Pressure reading outside measuring port casing

 $\Delta H = (P_o-P_i)/w w=0.4335 psi/ft$

D_{MP} = Depth to water inside monitoring port casing (below top of monitoring port)

 D_z = Depth to static level for monitoring zone = D_{MP} - ΔH

 E_{MP} = Elevation of measuring port casing

PL = piezometric level = E_{MP}-D_z

NS = Readings not stable.

Conventional low-flow ground water sampling logs

		······		LOWI	Tow Groun	<u>a vvater Sa</u>	ampling Loc	1
Date	6-14-01	Perso	onnel	TAN I	nas	Weather	750 them	od Hot
Site Name	Sillian's	Julge Evac	uation Method	Blad	der Puno	 Weli#	Mw 2	TO TO
Site Location			ling Method		n flow	– Project #	2015,0	
Well informa	tion:						<u> </u>	L
Depth of Well		ft.						
Depth to Wate		24 n.		- Measure	ements taken from	7		
Length of Wat		ft.			11.31	Top of Well Cas		
					14.21	Top of Protective (Other, Specify)	e Casing	
						(Other, Specily)		
Water param	<u>.</u>	sible pump slowly t						
	Position pump	in center of screen	ed interval &	maximum pumpi	ng rate of 0.5 liters	/minute		
	Depth Collect reading	s at every three mi	nute intervals T		I			T
Elapsed	То	1	1		Oxidation Reduction	Dissolved		
ime	Water	Temperature	рН	Conductivity	Potential	Oxygen /mg/()	Turbidity	Flow
0	14.24	1. 7.	4.89			(mg/l)	(NTU)	Rate (ml/min).
5				(38	-200.0	28.4%	4.2	100
	16.24	14.92	6.84	825	-195.7	21.1	5.3	200
10	16,25	15.02	6.87	938	-20.8	16.2	11.0	250
15	14. 20	13.96	6.89	1014	-210.6	6.3	160	300
20	16.28	13.60	6.88	1033	-214.2	1.7	190	350
25	14.29	13.50	6.86	1020	-214.2	626.2	35.0	300
_ 30	110.30	13.32	6.84	1019	-212.2	6.4	40	"
35	16.30	13.24	le.73	1017	-269.7	1 .	45	u
40	16.30		1 71		 	(y. ls		4
45				1012	-20.5	13,9	<u>50</u>	
50	14:30	13.22	6.68	. 1014	-205.4	2.9	37	lı .
55	16.30	13.12	669	<u>idi</u>	-205,9	3	35	((
	16.32	12.90	(v.le6	1003	-206.6	2.4	45	i.
(20	14.40	12.16	6.76	994	- H12	-0.9	40	()
65	16.42	12.12	677	992	-242.1	-0.4	3	11
70	14.43	12.19	6.80	990	-245.8	-0,7	40	·
							·	-
		·						
	· · · · · · · · · · · · · · · · · · ·							
ater sample:	· ·				<u> </u>	<u> </u>		
lime collected:	A			Total volume of n	urged water remov	red.	1000	Vonc
– bysical appear					Physical appeara	-	lo gal	2000
	Color (lear				yaicai appeala	•	Orange	
-	Odor Framic					Odor	organic	
Sheen/Free Pro	duct none				Sheen/Free	Product	none	
mples called	atadı							
mples collections on tainer Size	OCCUPATION CONTRACTOR	Time	# Callant		P	9		
TIL - PC	Container	Amber	# Collected	Field Filtere	0	reservative	Container	рH
0.5L-14			1	7		HNO		
100 m = 1		4	2		n	HC (
	7							
es:								
	 							

				Low	low Grour	<u>nd Water Sa</u>	ampling Loc	
Date	6-18-01	Perso	onnel	MAS		Weather	Sunny 80	
Site Name	Sullivan's Led	فِگ Evacı	uation Method		ler Pamp	_ Well #	MW-4	
Site Location	New Bedford	Samp	ling Method	<u>lou</u>	Flow '	Project #	20015.09	
Well informat	ion:							
Depth of Well	•	ft.		* Measure	ments taken from	•		
Depth to Wate	$\frac{1}{1}$	He ft.				Top of Well Cas	ina	
Length of Wate		ft.			7.74	Top of Protective		
						(Other, Specify)	· ·	
Water parame	ters: Lower submer	sible pump slowly t	hrough stagn	ant water column				
	ė .	in center of screer				s/minute .		
	Collect reading	gs at every three mi	nute intervals	·				
Florend	Depth			<u> </u>	Oxidation	Dissolved		
Elapsed Time	To Water	Temperature		0	Reduction	Oxygen	Turbidity	Flow
	7.76		pH / 9/1	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).
5	F. 10'	13.48	6.94	443	-77.5	INS 23		300
	7 (2)	13.84	(c.410	548	-82.6	0.44	12.4	275
10	7.80	12.88	6.42	575	-81.2	0.09	12-0	300
15		12.36	643	541	-81.1	-0.03	221	350
30	7.81	1235	6.48	467	-787	-0.01	1.10	400
25		12.37	6.50	442	-78.1	0.02	3,40	400
30	7.83	12.27	6.51	434	- 77,7	-0.01	2.30	400
35	7.84	12.33	6.52	431	-783	~003	1.//	400
40	7.85	12.35	6.52	429	-789	-0.04	1.75	10.0
			<u> </u>				11 (13)	
						· · · · · · · · · · · · · · · · · · ·		
·								·
ater sample:						<u>l</u>		
ime collected:	940			Total values a cf w			2 - 11	
hysical appeara	Ince at start				urged water remov	, -	3 gall	24S
	olor Crav				Physical appeara	ace at sampling Color	C Con C	
	dor nev	V.	•			Odor	CALL	
heen/Free Prod	luctnt	mi			Sheen/Free	Product	v usa c	j
mples collect	led:							
ontainer Size	Container	Type	# Collected	Field Filtere				
Komi-			2	rieio riiterei	<u> </u>	Preservative	Container (νn
	nitals place			r	<u>, </u>	H(\C)		
11-B	(B) Glass	1 Amber	<u> </u>	V)	173		
		· · · · · · · · · · · · · · · · · · ·	·				<u> </u>	
tes:					·	·	•	
, ·	حمقت (ألب جنيا	1 - N i	11 Es		1 1 5		~~~~	

		Low Flow Ground Water Sampling Log							
Date	6-18-01	Perso	onnel	MAS	THI	Weather	(20)00		
Site Name	Sullivaris	Miran's ladge Evacuation				Well #			
Site Location	New Bedford	(3)	Sampling Method Lew Flov			-	Muc-4+		
		<u> </u>			1,000	Project #	20015.09		
Well information:									
Depth of Well * ft. * Measurements taken from Depth to Water * 7.15 ft. FV/f									
Top of vveil casing									
_ Longin or vvai	er Column	п.	7.15			Top of Protective Casing			
					<u> </u>	(Other, Specify)			
Water parame	2 '	sible pump slowly t	hrough stagna	ant water column					
J	Position pump	in center of screen	ed interval & i	maximum pumpii	ng rate of 0.5 liters	s/minute			
		s at every three mi	nute intervals T	I	1				
Elapsed	Depth To			ļ	Oxidation	Dissolved			
Time	Water	Temperature	рH	Conductivity	Reduction Potential	Oxygen	Turbidity	Flow	
	7.15	12.37	5.87	7 -	8.2	(mg/l)	(NTU)	Rate (ml/min).	
5				(620		0.73	13.8	425	
	7.18	11.81	5. 14	734	-2.3	0.94	4,98	375	
10	<u> </u>	11.54	5.7	752	7 10:0	0.54	3,22	480	
15	7.19	11.100	572	7570	-182	1.47	3.37	3 <i>5</i> 0	
30	7.19	1.55	5.71	754	- 20.10	1.34	2.89	400	
25	7.20	11. GO	5.71	752	-34,9	0.81	269	400	
30		11.42	5.72	751	-27.6	0.73	2.79	-700	
35	7,19	11.65	5.71	748	-29.8	0.62		350	
40	7 19	11.64	574	7/10			2.69		
45	710		5.73	744	-32,3	0.58	2.59	350	
775	1.18	11.08	3. 13	744	-33.4	0.49	2.05	<u> 358</u>	
								• •	
						·		·	
					i	<u>_</u>			
								· · · · · · · · · · · · · · · · · · ·	
later sample:									
ime collected:	1050		٦	Total volume of po	urged water remov	/ed:	if galle	ns l	
Physical appeara					Physical appeara		1 3 3 3 3		
C	olor (llar	·			,	Color	Cour		
_	dor <u>Sulfura</u>	Smill				Odor 4	Slight Suffur	·	
Sheen/Free Proc	luct hone				Sheen/Free	Product _	none		
amples collec	ted:						-		
Container Size	Container	ype l	Collected	Field Filtered	· Ir	reservative			
loom	glassi Via		A.	n leid i Hitered		teservative	Container	JF1	
0.5 L	plast		ĺ	V	, 	Hooz			
100	Class	amber	2		1	Dens			
etes:									
_									

	1			Low	-low Groui	<u>nd Water S</u>	ampling Lo	g	
Date	10-15-D1		onnei	MIS	THU	Weather	85° Her He		
Site Name	Sallvan's	idez Evac	uation Method	Bk	edder Pun	<u>₂</u> Well#	m11:-5		
Site Location	New Beily			pling Method		Project #	30015.0	9	
Well informa									
Depth of Well	•	ft.		* Measure	ements taken from	,			
Depth to Wate	er*	7,360 n. t	p ZFVC	,,,casa,	THE TAKE THE TOTAL	Top of Well Ca	ain		
Length of Wat	er Column	ft.	10.0			Top of Protective			
Ì						(Other, Specify			
Water parame	eters: Lower subme	rsible pump slowly t	brough steen						
, rate, param		p in center of screer	niough stagn red interval &	ant water column	ng rate of 0 5 liter	n/minuto			
	Collect readin	igs at every three mi	nute intervals	maximum pumpi	ng rate or 0.5 liter	sarande			
	Depth				Oxidation	Dissolved		T	
Elapsed	То				Reduction	Oxygen	Turbidity	Flow	
Fime	Water	Temperature	рН	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).	
Ö	7.36	18.53	7.09	1159	228.5	0.04	0.55	300	
. 5		15.28	7.07	1169	233.8	0.05	15	300	
iO	7,50	1477	7.02	1181	2327	0.02	1.1	11	
15	7.89	14.57	7.06	1183	23:2.1	0.01	0.75	· i	
20		14.23	7.08	1183	2271	0.01	0.95	 	
25	8.25	14.20	7.10	1186	223,2	0.01	0.90	4	
30	0-0-0	14.21	7.13	11.30				1	
)0		19.01	7.10	1100	218.0	0.01	0.45		
						<u> </u>			
									
		ļ							
<u> </u>					`			·	
		ļ							
						·			
							 		
				···			<u> </u>		
		-							
									
		 							
ater sample:		.l.,	1			<u> </u>	<u> </u>	L	
ime collected:	1350			Total volume of p	urged water remo	ived:	_2 gal		
hysical appear	ance at start				Physical appeara	绘	7-0		
c	color <u>Clear</u>	·			,	Color	clar		
	odor <u>none</u>	·				Odor	ilou	-	
Sheen/Free Prod	duct <u>None</u>				Sheen/Free	Product	nou	•	
mples collec	ted:			- ;					
ontainer Size	Containe	г Туре	# Collected	Field Filtere	ď	Preservative	Containe	45H	
L. PCP		Amber	2 in			Preservative Container pH			
0,5L Wet	rals place)	H002			
Kenel-	va vial		2		<u> </u>	HCT			
 				1		,			
tes:									

	Low Flow Ground Water Sampling Log									
Date			nnel	MAS TAN		Weather	83° Hazy tot themid			
Site Name	Site Name Sullivan's ladge Evacu			Bladder Dump		- Well#	5A			
2 40 8			ling Method	Directory David		Project #				
Well informat			<u> </u>				20015.09			
Depth of Well * ft. *Measurements taken from Depth to Water * 7.27 ft. DVC Cauchy Length of Water Column ft. Top of Protective Casing										
Length of Wat		π. μ.	VC COLONIA	' }	ļ	Top of Well Cas				
Lenginorvia		······································	•	_	ļ	Top of Protective Casing (Other, Specify)				
Water parame		ible pump slowly th								
		in center of screen			ng rate of 0.5 liters	/minute				
	Collect readings at every three minute intervals Depth Oxidation Dissolved									
Elapsed	To				Reduction	Dissolved Oxygen	Turbidity	Flow		
Time	Water	Temperature	pН	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).		
Ø	Q.87	15.69	6.43	10xe7	165.5	1.35	50	390		
5	8 7.18		5.60	1 .						
$\vec{\omega}$	0011.10	13.74		1131	216.4	0,50	40	390		
· · · · · · · · · · · · · · · · · · ·		13.48	5.54	1146	245.5	0.25	30	350		
15	1.18	13.24	5.52	1137	267.1	0.19	28	425		
30	1,20	13.15	5.52	1130	277.3	0.15	12	450		
25		13.82	5.54	1149	2840	0.15	18	300		
30		13.91	5.55	1135	2594	0.13	Ÿ f	3∞		
35	7.15	14.09	5.56	1123	293.3	0.13	2.2	200		
40	7.11	1404	5.50	11:20	297.1	0.08	0,80	2 20		
45	7.05	1421	557	1122	300.2	0.10		300		
		11.01	<u> </u>	110-7	700, 2	(100	0.85	300		
								ļ		
				· · · · · · · · · · · · · · · · · · ·						

						·				
				:		-				
							· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
Vater sample:			······································							
ime collected:	1240			Total volume of p	urged water remov	ved:	<u>35 qa</u>	ellons		
Physical appear	ance at start				Physical appeara	ce at sampling				
		range				Color	Clear			
_	Odor MCN	0				Odor	nord			
Sheen/Free Pro	auctnon				Sheen/Free	Product	rung			
amples collec	:ted:									
Container Size Container Type # Collected Field Filtered Preservative Container pH										
IL- PU	B Blue H	2	Y		>		-			
1951-metald Plastic					1	HANDZ				
100 ml	Gluss VI	a	2	i	^1	8	40			
•			·							
otes;										
_			- ,							

	·			Low	Low Flow Ground Water Sampling Log					
Date	6-19-01	Perso	nnel	MR		Weather				
Site Name	Sulliveurs Late	لِدُ Evacı	uation Method	AM	at Power	Well#	mw-6			
Site Location	New Relford	_ Samp	ling Method		Flow	Project #	20015.09			
Well information	ion:									
Depth of Well		ft.		* Measure	ements taken from	<u>n</u>		,		
Depth to Wate		1. P	Vi lag to	P		Top of Well Ca				
Length of Wat	er Column	ft.	J	•		Top of Protectiv				
						Other, Specify				
Water parame	ž	ible pump slowly t								
		in center of screen s at every three mi		maxımum pumpı	ng rate of 0.5 liter	's/minute				
	Depth]			Oxidation	Dissolved		T		
Elapsed	То	i			Reduction	Oxygen	Turbidity	Flow		
Time	Water	Temperature	pH	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).		
0	5,09	1441	650	852	-9.0	-0.02	23.3			
5		14.33	6.39	892	4.0	-0.01	18.9	300		
10	5.19	1278	6.35	89	13.7	-0.01	8.51	150		
20	5,30	12.68	6.34	895	14.8	0.01	2.96	475		
	5.34	1279	6.34	891	14.7	0.02	284	475		
25	5.33	1273	6.34	894	14.8	0.05	1.91			
_										
]				
							·			
						,				
							·			
,										
								-		
ater sample:	insur						. (1)	•		
me collected:					ourged water remo	es .	Clear			
Physical appear	ance at start Color <u>Lear</u>				Physical appeara	Ece at sampling	Clary			
	odor none					Odor	none	-		
Sheen/Free Pro	duct ronu				Sheen/Free	e Product	MONI	• •		
mples collec	ted:									
Container Size	Container	Туре	# Callected	Field Filtere	d	Preservative	Containe	рН		
Likr-	Pre Direct 1		ㅂ							
CO ML	Max		- 4	<u>(1</u>		121				
Plante	. Plantic	_	;3	<u> </u>		HUC:				
						L				
tes:	1 11- 1	1 20-0	رجد ز	(n : 0 : :	, · ,	2876)				
Dug	1 collected	a rure	柯耳	W-17-01	time!	200	Apr	il 25, 1997		

April 25, 1997 Form developed by O'Brien & Gere Engineers, Inc.

				<u>Low l</u>	<u>-low Grour</u>	<u>ıd Water S</u>	ampling Lo	a
Date	12-19-01	Pers	onnel	mits		Weather		2
Site Name	Sillivans	Evac	uation Method	Blade	her Plans	Well #	MU-10A	
Site Location	New Baltard 11	Samp	oling Method		Flow	Project #	Davision	
Well informa	tion:							
Depth of Well		ft.			ements taken from	1		
Depth to Wate		ft. 1	apolinetal casin			Top of Well Ca:	sing	
Length of Wat	ter Column	ft.	casin	۲۵)		Top of Protectiv		
						(Other, Specify)	ì	
Water parame		ersible pump slowly				<u> </u>		
		p in center of screer			ng rate of 0.5 liters	s/minute		
		ngs at every three m	inute intervals	<u> </u>	<u> </u>	T =:	т	
B Elapsed	Depth To				Oxidation Reduction	Dissolved		
Time	Water	Temperature	рH	Conductivity	Potential	Oxygen (mg/l)	Turbidity (NTU)	Flow
0	5.47	14.53	6.21	1140	47.0	0.17	44	Rate (ml/min).
<u>Š</u>	5.50	13.29	6.12	Ildo	47.1	0.13	19.1	300
10	5.58	12.58	6.09	1163	47.7	0.06	249	380
15	5,58	12.46	(v.10	1169	46.0	0.03	19.4	400
30	5.55	1249	611	1173	45.6	0.07	2,4	1 400
25		2.46	6-11	1176	44.8	0.03	3.88	
30	5.58	12.49	G-11	1180	45.0	0.05	0.79	
		1	W-11	1130	15.0	0.05	<u> </u>	
							<u> </u>	
		 	<u> </u>					
	***************************************						•	
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	···					<u></u> .		-
						· · · · · · · · · · · · · · · · · · ·		
								
								
•		<u> </u>			·	<u> </u>		
								
	<u> </u>	•		·				
ater sample:		1						
ne collected:	1415			Total volume of p	urged water remo	ved:	2.5 gal	Vens
hysical appear					Physical appeara	ace at sampling	7).	
	color <u>ileur</u>				•	Color	Clear	_
heen/Free Prod	Odor <u>Estrang</u>	Sulfor-			Ch (5	Odor	Shall	-
	anct 700				Sheen/Free	Product -	gt" noni	=
mples collec								
ontainer Size	Containe		# Collected	Field Filtere	d l	Preservative	Containe	грН
Kenk	Alove of		<u> </u>	<u>. 10</u>		jt 0.1		
1/2	Playric	darx	<u>4</u>	17		<u>r)</u> - uae		
_	1 16:7110	·	<u> </u>	<u>'</u>	} 	Hney		
es:								
				 				

Sup+2- Collected here latelo-1961 time 1345

April 25, 1997 Form developed by O'Brien & Gere Engineers, Inc.

·		Low Flow Ground Water Sampling Log							
Date	8-9-00	Perso	nnel	inne		Weather Huzy Hot		90+ D	
Site Name	Sulti van's	adae Evacı	ation Method		Plow	Well#	MW-8		
Site Location	New Bedfor	Samp	ling Method	<u>ia</u>	u Piew	_ Project #	20015,09		
Well informa									
Depth of Well		ft.		* Measure	ments taken from	<u>n_</u>			
Depth to Wate Length of Wat		(42 ft.				Top of Well Cas			
Lengar or VVa		ft.			3.62	Top of Protectiv (Other, Specify)		•	
Water paren	-4					(Other, opecity)			
Water param	j.	sible pump slowly to in center of screen			a mto of 0 5 liber				
	Collect reading	s at every three mi	nute intervals	maximum pumpii	ig rate of 0.5 filer	s/minute .			
	Depth			0 1	Oxidation	Dissolved	T		
Elapsed Time	To	T	ļ	Epicific	Reduction	Oxygen	Turbidity	Flow	
	Water 2 1 2	Temperature	pH	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).	
3	362	17.33	6.43	1357	-123.4	2.84	Offsale	200ml	
1.		14,41,	6 42		1002	 		Coon	
10	71.07	<u> </u>	6.40	1398	-139.3	0.74	off-scale	400mL	
15	<u> 3.63</u> 3.64	15.23	4.36	1398	-104.7	0-61	170		
		15.21	6.37	1375	- 87.6	0.80	290	300 WL	
20	3.4	15.27	4.38	13.2	14.0	1.32	730		
30	3.65	15.65	6.39	1353	-47.0	h59	250	275	
	3.63	15.28	6.37	1345	-26.4	1-75	210	·	
35	<u> 3-61</u>	15.40	636	1339	-16.5	1.38	220	200/40	
40	3.64	13.51	6 32	1321	-5.6	1.89	200		
45		13.47	6.29	13.48	8.2	196	130	450	
	3.63	13.36	627	13 13	21.1	2-01	85	400	
55 60	3-63 3-63	13.79	6.26	[31]	29.8	2.28	70	400	
. 40	3 63	19 00	6.25	1310	37.2	219	45		
									
J									
					·			·	
									
Vater sample:									
ime collected:	1000		. 1	Total volume of p	urged water remo	oved:	Fgallin	5	
hysical appear		1			Physical appeara				
	olor <u>very re</u>	d Orange				Color Odor	Clear		
Sheen/Free Prod		L			Sheen/Free	-	none		
amples calls	tod.					-			
amples collections ontainer Size	ted: Container	Type	Collected	Field Filtered		Dreser estado		21	
JV		llminix	4	rieid riitered		Preservative 🕜	Container	hu	
libral glass vial 4			in		1701				
0.5L Blastic 2				n					
							L		
otes:									
	1 - 11	1					A 1	25 1007	

Dup # | collected here

Date Sie Name Sulliver's Leby Francision Method Sampling Meth	2-4-	<i>Q C</i>			LOW	riow Grou	ng Water S	Sampling Lo	q
Site Location Depth of Vall				onnel	mas				
Sampling Method Continue Con		Sullvan 5 e	Evad	uation Metho	d low	Flow	Well #		
Well information: Depth of West Depth to Water In the parameters: Depth to Water In the parameters: Lower submersible pump slowly brough stagnant water column Position pump in center of screened interval is maximum pumping rate of 0.5 literaminute Collect readings at every three minute intervals Depth To Temperature pH Conductivity Potential Depth Water Trop of Potential Top of Protective Casing (Other, Specify) Collect readings at every three minute intervals Depth To Temperature pH Conductivity Potential Depth Water Trop of Protective Casing (Other, Specify) Collect readings at every three minute intervals Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH Conductivity Potential Depth To Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature pH To Depth Temperature	Site Location	New tedtor	Sam	pling Method	low		_		
Depth to Water 3.77 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of PIC Measurements taken from n. 3.74 n. rep of DIC Measurements taken from n. 3.74 n. rep of PIC Measurements taken from n. s. specify (other, Specify)	Well inform	ation:				1,107		_10015.05	
Depth to Water Column It. 3. 94 HP Depth Confidence of the Column Column Position pump in center of screened interval & maximum pumping rate of 0.5 literaminute Collect readings at every three minute Intervals Depth To Transport Position pump in center of screened interval & maximum pumping rate of 0.5 literaminute Collect readings at every three minute Intervals Depth To Transport Position pump in center of screened interval & maximum pumping rate of 0.5 literaminute Collect readings at every three minute Intervals Depth To Transport Position pump in center of screened intervals Depth To Transport Position pump in center of screened intervals Depth Conductivity Position Position (mg/l) (pt/l) Rate (minim). Provided position pump in center of screened intervals Depth Conductivity Position (mg/l) (pt/l) Rate (mg/l) (pt/l) Rate (minim). Depth Conductivity Position (mg/l) (pt/l) Rate			•						
Water parameters: Lower submersible pump slowly through stagnant water column Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pumping rate o			77 ".	(~ -	* Measure	ements taken from	n_		
Water parameters: Lower submersible pump slowly through stagnant water column Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pump in center of screened interval & maximum pumping rate of 0.5 litera/minute Position pumping rate o		ater Column	π. τ	sb of br	C		Top of Well Ca	sing	
Water parameters: Lower submersible pump allowly through stagnant water column Proposition pump in center of screened interval & machinum pumping rate of 0.5 literarminute Dissolved Proposition pump in center of screened interval & machinum pumping rate of 0.5 literarminute Dissolved Turbidity Protectial To Reduction Oxygen Turbidity Provided Turbidity Protectial To Protectial Turbidity Protectial Turbi			π.	2, 7 4 40	parstel		Top of Protection	e Casing	
Water parameters: Lower submersible pump allowly through stagnant water column Proposition pump in center of screened interval & machinum pumping rate of 0.5 literarminute Dissolved Proposition pump in center of screened interval & machinum pumping rate of 0.5 literarminute Dissolved Turbidity Protectial To Reduction Oxygen Turbidity Provided Turbidity Protectial To Protectial Turbidity Protectial Turbi		·			وم الحمد		(Other, Specify)	
Posterior pump in center of screened intervals a maximum pumping rate of 0.5 literaminute Collect readings at every three minute intervals Depth To	Water param	neters: Lower submer							
Depth Turbidity Flow Rate (milmin) Flow		Position pump	in center of screen	ned interval &	maximum numnii	no rate of 0.5 liter	s/minuto		
Depth To Water Temperature pH Conductivity Preservative Dissolved Oxygen (NTU) Rate (mlmin). Conductivity Preservative PH Conductivity Preservative PH Conductivity Preservative Ph Conductivity Preservative Ph Conductivity Preservative Container Pts: Container Street Container Type Ph Conducted: Preservative Container pts: Container Pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Street Container Type Container Pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Type Ph Colocated: Preservative Container pts: Container Type Ph Colocated: Preservative Container pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Street Container Type Ph Colocated: Preservative Container pts: Container Street Container Stre		Collect reading	s at every three mi	inute intervals	;	ng rate of 0.5 mer	sminute		
Total volume of purged water removed: Tota						Oxidation	Dissolved	Т	
Water Pemperature PM Conductivity Potential (mg/l) (NTU) Rate (mlmin)	-	То				I		Turbidita	-
16.98 16.98 17.58 17.6 17.8 17.0	ime	Water	Temperature	рН	Conductivity	1 .	1	1 -	
14.72 5.60 1267 766 3.78 1400 3.50 14.56 5.64 1269 120.5 3.95 950 14.56 5.66 1266 1326 5.69 750 350 14.31 5.72 1271 14.27 4.27 4.00	0		16.98	5/4					
14.56 564 1249 1265 3.95 950	5							700	1 700, 59
14. 14. 16.						76.6		NOO	350
14.50 5.66 1266 1326 5.69 750 300 14.30 5.71 1266 1328 4.27 600 600 14.31 5.72 1271 14.2 4.75 450 438 30			14.56	5.64	269		3.95		
14.25 5.71 746 143.9 4.27 600 400 30			14.50	5.66			51.9		380
25	20						1107		
171.2 4.75 3.99 430 3.95 3.97 171.2 4.75 3.99 4.00	25			~ ~					
126							4.75	450	480
12 12 12 12 12 12 12 12					1271	152.5	5.56	319	Um
14.14 5.82 12.75 13.15 4.02 290			1423	5.89	1269	124.6	6.13	290	1
14.15 5.80 1278 146.7 4.36 230 S5 14.24 5.83 1273 153.2 3.51 210 14.13 5.84 1275 154.4 4.62 210 14.13 5.84 1275 154.4 4.62 210 Iter sample: the collected: 250 Color Drawn muldy Color Drawn muldy Color Odor Odor Odor Name Total volume of purged water removed: Physical appearance at start Color Odor Odor Odor Odor Sheen/Free Product Total volume of purged water removed: Physical appearance at sampling Color Odor Odor Odor Odor Odor Sheen/Free Product Total volume of purged water removed: Physical appearance at sampling Color Odor Odor Odor Odor Thoma The Collected Field Fillered Preservative Container pti Thoma Tho			14.14	5.82				390	
SO 3.37, 3.52 44.27 5.82 1275 148.7 4.28 190 400 14.13 5.84 1275 154.4 4.82 210 14.13 5.84 1275 154.4 4.82 210 14.13 5.84 1275 154.4 4.82 210 14.13 5.84 1275 154.4 4.82 210 15	46								<u> </u>
14.24 5.83 12.73 153.2 3.51 210 14.13 5.84 12.75 154.4 4.82 210 ter sample: ter collected: 3.50 Sical appearance at start Color Drawn muldy Odor None Physical appearance at sampling Color Odor None Sheen/Free Product None Total volume of purged water removed: Physical appearance at sampling Color Odor None Sheen/Free Product None Total volume of purged water removed: Physical appearance at sampling Color None None Total volume of purged water removed: Physical appearance at sampling Color None None Total volume of purged water removed: Physical appearance at sampling Color None None None Total volume of purged water removed: Physical appearance at sampling Color None None None Total volume of purged water removed: Physical appearance at sampling Color None None None Total volume of purged water removed: Physical appearance at sampling Color None None None Total volume of purged water removed: Physical appearance at sampling Color None None None Total volume of purged water removed: Physical appearance at sampling Color None None None Total volume of purged water removed: Total volume of p	50	337 262							
ter sample: ter sample: ter sample: ter collected: 350 sical appearance at start Color Drown muddy Odor None en/Free Product None Total volume of purged water removed: Physical appearance at sampling Color Odor None Sheen/Free Product None Total volume of purged water removed: Physical appearance at sampling Color Odor None Sheen/Free Product None Total volume of purged water removed: Physical appearance at sampling Color Odor None Sheen/Free Product None Total volume of purged water removed: Physical appearance at sampling Color Odor None None Total volume of purged water removed: Physical appearance at sampling Color Odor None None Total volume of purged water removed: Physical appearance at sampling Color Odor None None Total volume of purged water removed: Physical appearance at sampling Color Odor None None Total volume of purged water removed: Physical appearance at sampling Color Odor None None Total volume of purged water removed: Physical appearance at sampling Color Odor None None None None None None None None		7.7., 2.7						10	400
ter sample: de collected: 350					1273	153.2	3.51	210	
ter sample: ter sample: the collected: 1350 Color Odor Nome Physical appearance at start Physical appearance at sampling Color Odor Nome Physical appearance at sampling Color Odor Nome Sheen/Free Product Preservative Container Type # Collected Field Filtered Preservative Container ph O,5 L Plackic 3 N H102 Sad Look 9, waker at well fitting for 15 5 mins spent adjusting	40		14.13	5.84	1275	154.4	4.82		
Total volume of purged water removed: Total volume of purged water removed: Total volume of purged water removed: Physical appearance at sampling Color Odor Odor Pone Preservative Container Type # Collected Field Filtered Preservative Container pH Class Ambor PLB's (a none Preservative Container pH Container pH Total volume of purged water removed: To									
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Physical appearance at start Color Odor None en/Free Product Inples collected: Italier Size Container Type # Collected Field Filtered Preservative Container pH Glacs Ambre PCB's 6 1 1000 Dist Placehic 3 1 1000 Sheen/Free Product Preservative Container pH O.5 L Placehic 3 1 1000 Sheen/Free Product Preservative Container pH O.5 L Placehic 3 1 1000 Sheen/Free Product Preservative Container pH O.5 L Placehic 3 1 1000 Sheen/Free Product None Field Filtered Preservative Container pH O.5 L Placehic 3 1 1000 Hand Sheen/Free Product None Sheen/Free Product		1350		· · · · · · · · · · · · · · · · · · ·	'atal coton d			7 (
Color Odor None Preservative Color Odor None Inples collected: Interest Container Type: # Collected Field Filtered Preservative Container pH: Container Size Container Type: # Collected Field Filtered Preservative Container pH: Container pH: Color Odor None None Places Ambre PLB's 6 None Container pH: Collected Field Filtered Preservative Container pH: Container pH: Color Odor None None Container pH: Container pH: Collected Field Filtered Preservative Container pH: Container pH: Color None Color None Color None Color None Color None Container pH: Collected Field Filtered Preservative Container pH: Color None Color None Color None Color None Color None Color None Color None Container pH: Collected Field Filtered Preservative Container pH: Color Color None Color Non	_			,	•	99	-	t gal	
Odor None en/Free Product None Sheen/Free Product None Container Type # Collected Field Filtered Preservative Container pH None 1.		v	بباطي		Р	hysical appeara	ce at sampling	,)	i
Sheen/Free Product Sheen/Free Product Sheen/Free Product Sheen/Free Product NONC Sheen/Free Product NONC Sheen/Free Product NONC Sheen/Free Product Preservative Container pH O.5 L Placefic 3 N H103 Si Bad Liak & Wake at Well String for 15 5 mins speat adjusting		- KY1 ON-11	rusay				-		1
Sheen/Free Product									İ
fainer Size Container Type # Collected Field Filtered Preservative Container pH 14 Glass Ambrer PCB's 60 0 0 000000000000000000000000000000		VVDELL				Sheen/Free F	Product _	none	1
Si Bad Leak of water at well fitting for 15 5 mins spent adjusting	nples collect	ed:							
Si Bad Leak of water at well fitting for 15 5 mins spent adjusting	tainer Size	Container T	ype #	Collecter	Field Filtered				
Si Bad Leak of water at well fitting for 15 5 mins spent adjusting						P		Container	DH.
3. Bad Leak of water at well fitting for 15 5 mins spent adjusting				3					
							11/103		
									
	. 2	1 1 10 10 10 10		241 0		<u>-</u>			-,,
	± Day	z war y w	war at c	Nell 41	ring for	125	mins c	pent adjus	sting
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Matrix Spike and MSD

April 25, 1997
Form developed by O'Brien & Gere Engineers, Inc.

		Low Flow Ground Water Sampling Log							
Date	19-15-01	Perso	onnel	TAN	11/125	Weather	Hazy tot		
Site Name	Sallivaris Lector	Evac:	uation Method	13/0	dder	 Well #	10	E HILMICA	
Site Location	New Bedford	Samp	oling Method	10	~ Flow	Project #	90015,09		
Well informa	tion:		=======================================						
Depth of Well		ft.		* Measure	ements taken fron	•			
Depth to Wate	er *		top & P		Therito taken non	Top of Well Cas	ina		
Length of Wat		ft.	1-1-01	VC.		Top of Protective	•		
						(Other, Specify)			
Water parame	eters: Lower submers	sible pump slowly t	hrough stagn:	ant water column					
	Position pump	in center of screen	ned interval &			s/minute			
		s at every three mi	nute intervals	<u> </u>			·		
Elapsed	Depth To				Oxidation	Dissolved			
Time	Water	Temperature	рH	Conductivity	Reduction Potential	Oxygen (mg/l)	Turbidity (NTU)	Flow	
	1.39	1167	6.90	965	-152.4		Outstrange	Rate (ml/min).	
5	11.21				<u> </u>	-0.07	il	450	
10	1.45	11.46	6.67	360	~1050	-0.05	ļ	600	
: 10	1.75	11.82	6.56	845	-788	-0.03	."1	450	
20	2 2 1 2 1	11.81	6.50	843	-61,0	-0.02	(1	450	
	144	1 - ;	6.45	843	-63.3	-0.03	11	400	
25	1.44	193	644	840	-537	-0.03	1000	450	
35		1189	6.41	838	-43.3	-D.CZ	350	450	
	1.46	12.04	10.41	930	-36.6	-0.01	320	400	
40	1.48	12.54	e.39	826	-27.5	-0.02	310	350	
45	144	1297	6.38	827	-24.9	-0.01	450	350	
50	1.44	12.66	6.38	826	- 30.7	10.0	600	360	
55		13.25	6.37	825	-32.2	-0.02	700		
	Charres 1	2 tank							
45	1.41	13,41	6.40	831	-496	-0.01	out of range	410	
70	1.41	1231	6.36	823	-37.5	-0.02	600	325	
75	1.42	12.33	4.34	819	-290	-0.01	310	400	
80	1.50	12,19	6.33	819	-18.9	-0.01	330	375	
35	149	12.21	6.31	814	-15,1	£000	180	375	
90	1.45	12.09	6.29	813	-5.7	-0.01	270	380	
95		12.15	6,28	8/3	-0.3	0.00	130	390	
ater sample:									
Time collected:	1055		•	Total volume of p	urged water remo	ved:	10 gal		
nysical appear	ance at start Color B(DWA)	VOCU mod	du		Physical appeara	nce at sampling	J		
_	Total volume of purged water removed: Physical appearance at start Color Odor Odor Total volume of purged water removed: Physical appearance at sampling Color Odor Odor								
heen/Free Prod	een/Free Product Sheen/Free Product								
	mples collected.								
amples collec									
L -			# Callected	Field Filtere		Preservative	Container	pH	
				7		itne.			
10001-1				0 14013					
lotes:							•		

	1 10 . (·			nd Water S	Sampling Lo	g
Date	6-19-01	Pers	onnel	25	٢	Weather	Hot su	my 850
Site Name	Solhvans	7	uation Method	bai	ler	Well #	MW-10H	-
Site Location	Huw Bedford	Sam _l	pling Method	Ba	Mer	Project #	20015.	69
Well informa	ition:			···				
Depth of Well	j.	5.30 ft.		* Measure	ements taken from	m		
Depth to Wat	er *	3 9/0 ft.	120 8 PM	,	CINCING TAKEN NO	Top of Well Ca	·-i	
Length of Wa	ter Column	ft.	May of the	<u>. </u>		Top of Protecti		
		7. 90 ft. ft.	Bail	baal		(Other, Specify		
Water param								
vvater param	<u>.</u>	sible pump slowly in center of screer	inrough stagn	ant water column) 			
	Collect reading	s at every three m	inute intervals	maximum pumpi :	ng rate of 0.5 lite	rs/minute		
	Depth		Total Williams		Oxidation	Dissolved	T	T
Elapsed	То	j			Reduction	Oxygen	Turbidity	Flow
ime	Water	Temperature	рH	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).
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ater sample:						<u> </u>		<u> </u>
ime collected:	0:30			Total volume of -			la sella	
ysical appear	ance at start	_		Total volume of p	=	42	Le galler	17
	Color				Physical appeara	e at sampling	J	
- AH	Odor					Color Odor	•	-
been/Free Pro	duct	· ·			. Sheen/Free		- · · · ·	[
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amples collec	ted:							
ontainer Size	Container		# Collected	Field Filtere	d	Preservative	Containe	грН
116.mL	Renber V		7	n		Her		
- -	comiser q		3	(1		H12 . 1)0	ili.	
1036	Place	<u>ن</u>				14110		
otes:		_			•			
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		Low Flow Ground Water Sampling Log							
Date	(0-19-0)	Perso	onnel				Weather Hot Sunn		
Site Name	Sullivansiale	Evaci	uation Method	Blade	la Pamo		MW-10P		
Site Location	New Balford	Samp	ling Method		Flore	Project #	20015.09		
Well informa			· · · · · · · · · · · · · · · · · · ·						
Depth of Well	•	ft.		* Measure	ements taken from	ı		•	
Depth to Wate	er• E	7.35 ft. Te	op g metal			Top of Well Cas	ina		
Length of Wat	er Column	ft.	(8/31/19)			Top of Protective	•		
			J			(Other, Specify)			
Water parame	eters: Lower submers	ible pump slowly t	hrough stagn	ant water column					
	Position pump i	n center of screen	ed interval &	maximum pumpi	ng rate of 0.5 liters	s/minute			
		at every three mi	nute intervals	 		T	·		
Elapsed	Depth To		1		Oxidation	Dissolved	_		
ime	Water	Temperature	рH	Conductivity	Reduction Potential	Oxygen (mg/l)	Turbidity	Flow	
0	\$.35	12.61	6.74	931		(mg/l)	(NTU)	Rate (ml/min).	
5	- ag : 32	12.04	1	† <u> </u>	"56 U	-0.08		300	
	Q20.31		6.65	900	- 50.8	0.05	Of Scale	350	
10		1305	6.55	382	-30.6	~0.05	133	356	
15	p. 70.37		6.43	877	- 6.9	-0.05	86.0	200	
30		12.74	643	872	-0.1	-0.03	91.8	350	
35	38	11.67	6.37	374	4.1	-001	101.1	370	
30		11.79	6.33	567	8.5	<u>O</u>	79.1	370	
35		11.80	(a.30)	Sielo	14.2	0.09	648	350	
40	0.38	<u>il 33</u>	6.27	863	196	0	43.5	350	
45	0.39	11.99	6.24	Slu 3	24.8	0.01	45.4	350	
50	0.34	11.84	6.22	861	27.4	0.03	517	350	
55	0.39	12.07	6.20	853	32.3	0.01	37.3	350	
60	0.38	13.0	(e.18	854	36.4	0.01	362		
.									
									
								 	
						:			
ater sample:	0.20						· · · · · · · · · · · · · · · · · · ·		
ime collected:	9:30		•	Total volume of p	urged water remo	ved:			
ysical appear	,	6.			Physical appeara	ce at sampling	3 . 4		
	olor <u>very much</u>	ruj				Color	light ovan	ze	
been/Free Pro					Sheen/Free	Odor Product	<u>none</u>		
						-	<u> </u>		
mples collec		-0: voissessessessessessesses		500000 \$ ****************					
ontainer Size	Container 1		# Collected	Field Filtere		Preservative	Container	oH.	
11	glass via ambu a		<u> </u>	HU	nč	Itel	- 		
18.56	Plushe	· · ·	3	ř	lic l	j11)6:2			
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otes:				•					
	2015	7.							

MS MSD collected here - times 11:35 and 940

April 25, 1997

MSI breaking believe battery is known will recharge after collect String & Gere Engineers. Inc.

	1 12 01					ng water S	Sampling Loc	
Date	10-15-01	Perso	onnel	M.AS	TAN	Weather	Claudy Mu	CH C
Site Name	Sullvents		uation Method	_Blad	da Pany	Well#	MW 10B	1-1
Site Location	Drw Bedt	Samp	ling Method		Flow	Project #	2015.09	
Well informa								
Depth of Wei								
Depth to Wat		ft.	top of ove	Measure	ements taken from		÷	
Length of Wa		1.59 ft.	TOP IT DUC			Top of Well Ca		
Length of Wa	titel Column	It.			ļ	Top of Protect		
					<u> </u>	(Other, Specify	/) 	
Water param	eters: Lower subm	nersible pump slowly t	hrough stagnant	water column				
		mp in center of screer		ıximum pumpi	ng rate of 0.5 liter	rs/minute		
		lings at every three mi	nute intervals					
	Depth				Oxidation	Dissolved		
Elapsed	То				Reduction	Oxygen	Turbidity	Flow
Time	Water	Temperature	рн с	onductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).
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					<u> </u>	ļ	 	<u> </u>
						<u> </u>		
						<u> </u>		
ater sample				4			•	
Time collected:			То	tal volume of p	urged water remo	**		
hysical appea				•	Physical appeara	ance at sampling		
N.	Color Odor				•	Color		
Sheen/Free Pro			•		Ob	Odor		·
					Sheen/Free	e rroduct		
mples colle	cted:	·						
Container Size		ner Type	# Collected	Field Filtere	d	Preservative	Container	рH
						and the second s		
<u> </u>								
tes:								
								

could not got worker to purgy

			Low Flow Ground Water Sampling Log								
Date	6-14-01	Perso	onnel	MAST		Weather		Hot & Hurid			
Site Name	Sullivan's		uation Method	1 Black	Blackler Puns		JAR	THE WAY			
Site Location	new bed for	Samp	ling Method	Ler	e Flow	Project #	20015.0	9			
Well informat	ion:										
Depth of Well		ft.	•	* Measure	ements taken from	1_					
Depth to Wate		7.81 A. +	op if eve	<u>.</u>		Top of Well Ca					
Length of Wate	er Column	ft.				Top of Protectiv					
					<u> </u>	(Other, Specify)					
Water parame		sible pump slowly t									
1		in center of screen gs at every three mi			ng rate of 0.5 liter	s/minute .					
	Depth	gs at every three mi	nute intervais	<u> </u>	Oxidation	Dissolved	Т				
Elapsed	To	}		•	Reduction	Oxygen	Turbidity	Flow			
ime	Water	Temperature	рН	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).			
0	7.81	15.69	6.40	1028	-1158	1.58	80	500			
5	7.81	14.70	4.25	1084	-143.8	-0.10	29	485 59			
10	7.83	14.13	6.24	1078	-143.3	-0.08	24	400			
15	7.83	1464	6.25	1070	-144.60	-0.07	14	400			
20	7.81	14.52	6.25	1056	-1428	-0.05	14	100			
25	7.82	14.73	6.26	1845	~142.7	-0.05	141				
30	1.82	1453	6.26	1028	-141.2	-0.04	lla				
35	7.81	14.53	6.26	1014	-141.0	-0.04	ile				
40	7.83	14.56	6,26	1017	-140.7	-0.04	15				
45	1.83	14.54	4.27	1019	-140.8	-0.04	14				
<u> </u>											
	· · · · · · · · · · · · · · · · · · ·										

						· · · · · · · · · · · · · · · · · · ·					
ater sample: ime collected:	1430			Tatal continues of a			E 1				
hysical appeara				otal volume of p	urged water remo	88:	5 gal	lons_			
, ,,	olor light o	YOUNGE.			Physical appeara	ece at sampling Color	light or a	47C4 9			
	dor. Jogy					Odor	NOUL	<u> </u>			
heen/Free Proc	luct New Stick	1			Sheen/Free	Product	very sha	1ht			
mples collec	ted:					HT. I I I I		1			
ontainer Size	Container	Туре	# Collected	Field Filtere	d	Preservative	Contain	er pH			
11- PC	B Blyss Av	nber	3	n							
0.51-m	etals Plustic		<u>i</u>	# # **	3·D	HNOZ					
Wal vi	al Vers V	ial				1-1-1-1					
tes:							L				
	to Hois Humed	.4. Tidora	e con A.	int a b a	- حالات	made Alberto	: C	hide.			
٠ : ٢٠٠٤	to High Humid	ury mere i	= (Crowk)	reacher o	n the te	mpu vill	S TUP	oril 25 1007			

Felieve this is resulting in inaccurate high readings Form developed by

All their parameters stable-sample collected O'Brien & Gere Engineers, Inc.

				Low F	low Groun	d Water Sa	<u>impling Log</u>	
Date	6-15-01	Person	nnel	mits:	TAN	Weather	859 Hot 1	humid
Site Name	Sullivan's	lecter Evacu	ation Method	Blei	dder Pum	O Well #	MW-130	
Site Location	New Bullion	Sampl	ing Method		on Flew	Project #	20015,09	
Well informat								
Depth of Weil	•	ft.		* Measure	ments taken from	•		
Depth to Wate		2.04 n. p	i. 11	Weasare	There's taken nom	Top of Well Cas	ina	•
Length of Wat		# ft.	VC .			Top of Protective	•	
A		····				(Other, Specify)	- ousing	
			·					
Water parame	j.	ble pump slowly th						
		n center of screen			ng rate of 0.5 liters	/minute		
	Depth	at every three mir	lute intervals	<u> </u>	Oxidation	Dissolved	1	
Elapsed	То	·			Reduction	Oxygen	Turbidity	Flow
Time	Water	Temperature	рH	Conductivity	Potential	(mg/i)	(NTU)	Rate (ml/min).
0	1204	13.23	(e.19i	703	-56.0	Ô		700
5	12.08	13.05	4.02	742	-138	-0.11	13	400
10	1205	13.01	5.98	741	-701	-0.02	1,6	490
15	13-210 R.08	13.36	6.02	744	-604	-0.11	1.2	100
120		13.29	6.00	741	-(24.5	0.01	1.0	<u> </u>
	12.08						†	<u> </u>
25	2.00	13.19	5.99	741	-67.0	-0.02	1,0	
30	12.08	13.09	5.99	741	-6g.1	-0.0	1.0	
	 							<u> </u>
_								
		· · · · · · · · · · · · · · · · · · ·						
7							<u></u>	
	·							
*								
Vater sample:							7 5	<i>;</i> ")
Time collected:	1450			Total volume of	ourged water remo	8 8	3.0 gal	<u>/</u>
Physical appea					Physical appeara	~.		
i	Color <u>Clear</u>					Color	ckar	-
Sheen/Free Pro	Odor none				Sheen/Free	Odor	none	-
Sheel Write ric	oduct <u>none</u>				Oneen/11ee	- Todact	- 70	-
amples colle	cted:							
Container Size	Container		# Collected	Field Filter		Preservative	Containe	rpH
1. P		Amber	3		^	<u> </u>	<u> </u>	
0.5L-V			\ \		2	1111		
100ml -	vocs Ambu	4104	<u></u>		<u> </u>	нц.		
						<u> </u>		
<u>otes;</u>								

			Low Flow Ground Water Sampling Log							
Date	6-18-01	Perso	nnel			Weather	4 3 2 2			
Site Name	Sulli van's la	dge Evacı	uation Method	Bla	Ader Purup	— Well#	MW-13A			
Site Location	New Bolford	Samp	oling Method Low Flow			Project #	2001510			
Well informa	tion:									
Depth of Well	•	ft.		* Measure	ements taken fron	3				
Depth to Wate	er *	1.00 ft. 0w	15. de	i on		Top of Well Cas	sina			
Length of Wat	er Column	· ft.	ds. du Galang Measurements taken from			Top of Protective Casing				
			•	•		(Other, Specify)				
Water parame	eters: Lower submen	sible pump slowly t	hrough stagn:	ant water column						
	Position pump	in center of screen	ed interval &	maximum pumpi		s/minute				
		s at every three min	nute intervals							
Elapsed	Depth To			, ·	Oxidation	Dissolved				
fime	Water	Temperature	рH	Conductivity	Reduction	Oxygen	Turbidity	Flow		
0	1210		6.38		Potential	(mg/l)	(NTU)	Rate (ml/min).		
. 5	11:10	18.32		582	22.6	O.14	0,65	3/5		
10		 	6.02	703	-35.4	0.04	@31	375		
	4.91	13,21	5.98	708	-40.3	0.10	Ce.81	11		
15	112	13.21	5,97	706	-41.5	0.12	6.67	61		
20	12.19	13,20	5.98	709	-42.7	0.09	4.03	/:		
उर	BIRM	13.16	5.99	706	-44.1	0.08	6.65			
30	12.21	13,22	5.99	709	-44.2	0,11	10.86			
35	1221	13.22	5.99	708	- 443	0.08	6.79			
40		13.17	5.99	709	-44,2	0,10	664			
1 45	12.23	13.01	5,99	707	- 44.5	0.09	6.88	350		
50		13.02	5,99	707	745,0	0.07	6.46	1 2 22		
55	12.21	13.60	5.99	708	-45.7	0,09		350		
60	1 10 2 3 1	13.01	5.98	708	11/1	0.09	(0.64 (0.44	1 200		
	,	7.0	7.13		-46,1	0.0	10-17			
				•				-		
'							:	ļ		
								ļ		
)										
ater sample:										
ime collected:	1510		,	Total volume of n	urged water remo	wad:	45	20.0		
nysical appeara	ance at start			•	Physical appeara	œ -	1,) 6	jax		
	color light oran	ge_			r ilysical appeal a	gice at sampling Color	Very light	Evanos		
	odor Everanic					Odor	Shahl &	Evange rouse		
heen/Free Proc	duct <u>APNQ</u>				Sheen/Free	Product	nene	- 1		
mples collec	ted:									
ontainer Size	Container	Type la	Collected	Field Filtere		Preservative	Containe	7.5L		
100 m1-voc jalas mal				in take i interes	n	HC1	CONTAINE	· Þa		
105L	L-metals plactic		1	· ·		HDO a				
101	glass Amber 2			r		n,				
·				·						
otes:							•			

		· · · · · · · · · · · · · · · · · · ·		Low I	low Groun	id Water S	ampling Lo	q
Date	6-14-01	Perso	onnel	MAS		Weather	il.e. it	Humid
Site Name		<u> </u>	uation Method	- Lew	Flour	Well#	Mu2-14	The state of the s
Site Location	New Bedfore	Samp	ling Method		w Flow	Project #	20015.09	·
Well informat						- 		
epth of Well		ft.		• Measure	ements taken from	İ		
epth to Wate		.70 ft.	TO AC			Top of Well Ca	asina	
Length of Wate	er Column	ft.				Top of Protecti	•	
						Other, Specify	')	
Water parame	ters: Lower subme	rsible pùmp slowly t	hrough stagn	ant water column				
•	Position pump	in center of screen	ed interval &	maximum pumpi		s/minute		
ļ		gs at every three mi	nute intervals					
Elapsed	Depth To				Oxidation Reduction	Dissolved	1	
ime	Water	Temperature	рH	Conductivity	Potential	Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	15.70	14.38	4.23	974	-133.7	39.9	50	400)
. 3	15.80	13.07	4.21	781	152. F 140.4	21.2	40	(M)
10	15.75	12.72	1 0	971	7145.0			
15	1 0 1	12.54	1			10.2	32	1,
20	15.75	12.57	6.19	1007	-143.	5.2 2.1	37	 '''
35		10	6.20	1003	-1425	· · · · · · · · · · · · · · · · · · ·	3-	
30	(5, 75	12.64		1994	-142.8	2.4	25	1 ''
50	1575	12.661	6.21	174	-141.3	27	32	4
								
								
-				· · · · · · · · · · · · · · · · · · ·	ļ			
								
		<u> </u>		 	<u> </u>		<u> </u>	
					·			
								
		·						
	·					•		
ater sample:	iioo						~ <	<i>M</i>
ime collected:	1190			Total volume of p	ourged water remo	*	3.5 ga	yous
ysical appear		mange_			Physical appeara	ce at sampling Color		
	Odor Organic	7				Odor	- CROUN'S	-
heen/Free Prod					Sheen/Free	Product	0.4	
mala a cella a	A-J-							
mples collec	Warner and the second	r Type	# Collected	Field Filter	on I	Preservative	Contain	er nH
ontainer Size Container Type L - PCB Gluss Angler			2	rieid riitere			Comain	SP PEI
D.SL-M.	las Pastic					HNOZ	,	
100ml Vie	al glass	ander VIA	2		\triangle	1408		
					<u></u>			
stes:		<u> </u>	·					
1 M. I.	1-4			. 1 10		^	_ /	

High Humidy cursing Condensation on turb. Samples & not accurate April 25, 1997 reading - All other parameters Stabilized Form developed by O'Brien & Gere Engineers, Inc.

	7			Low	-low Grour	<u>ıd Water S</u>	ampling Lo	9
Date	6-13-01	Perso	nnei	MAS		Weather	80 Sung	
Site Name	Sullivon's Lee		ation Method	Black	for Purup	Well#	MW-15	
Site Location	Au Belfor	Samp	ling Method	Levi	Flow	Project #	20509	
Well informa								
Depth of Well	ı• 	ft.		* Measure	ements taken from	1		
Depth to Wat		3.19 ft. t	o PVC			Top of Well Ca	sina	
Length of Wa	ter Column	ft.				Top of Protectiv		
						(Other, Specify)		
Water param	eters: Lower submer	sible pump slowly t	hrough stagn:	ant water column				
	Position pump	in center of screen	ed interval &	maximum pumpi	ng rate of 0.5 liters	s/minute		
,	Collect reading	s at every three mi	nute intervals	_	·	·		
Elapsed	Depth				Oxidation	Dissolved		
ime	To Water	Temperature	pH	Conductivity	Reduction	Oxygen	Turbidity	Flow
	1819		-	Conductivity	Potential	(mg/l)	(UTU)	Rate (ml/min).
5		11.10	654	890.0	-96.5	44.7	17	300
	1000	13.48	640	9820	-89.0	17.1	 	300
	17.95	13.0)	6.39	981.0	-91.0	18.5	10	380
15	17.86	12.91	6.40	975	-91.5	144	7.4	370
30	17.84	12.85	6.40	976	-93.5	9.5	4.3	10
25	17.89	12.91	6.39	965	-95.3	6.2	34	11
30	17.89	12.90	640	955	-96.3	5.0	4,3	iz
35	17.86	12.93	6.40	946	-96.3	4.4	4.3	4
-10	1787	12.90	6.42	942	-992	3.8	.05	i,
					14, 1	<i>J</i> . 3	,05	· · · · · · · · · · · · · · · · · · ·
								
								
						<u> </u>		
,	- '						· · · · · · · · · · · · · · · · · · ·	
						······································		
						·		
ater sample:								
ime collected:	10 00			Total values of	urged water remo		'2 C	Μ .
Lysical appear				·		e ·	(lear sugar orga	Youz
	Color Clear	•			Physical appeara	ace at sampling Color	(Dans	
	Odor organic					Odor	client Drug	نمادا
heen/Free Pro	duct <u>ho</u>			•	Sheen/Free	Product	ihe	
mples collec	ted:		-	_				
ontainer Size	Container	Type I	# Collected	Field Filtere		Preservative	C	ne e
	CB Elects Ar		2	1 1		reservative	Container	·μα
0.5L r	neballo Dustic				5	HNO2		
(Wint	·Vor's Vial	- V	ユ	· ·)	Hel		
es:			· · · · · · · · · · · · · · · · · · ·					
								

						d Water Sa	<u>ampling L</u>	og
Date	6-13-01	Pers	onnei	MAS ()JA, TAN	_ Weather =	tof Humo	Sumu
Site Name	Sullivan's	lodge Evac	uation Method	lacil	low	Well #	mw-16	
Site Location			oling Method	· .		Project #	20015.0	9
Well informa	ation:							
Depth of Wel		ft.		* Measure	ements taken from	1	•	
Depth to Wat		10,03 ft.	·			Top of Well Cas	sing	
Length of Wa		ft.	•			Top of Protective	e Casing	•
						(Other, Specify)		
Water param	neters: Lower subme	rsible pump slowly	through stagn	ant water column	·			
,		p in center of scree				s/minute		
<u>}</u>		igs at every three m	inute intervals	,				
	Depth			Spec.	Oxidation	Dissolved	T	`\
Elapsed Time	To Water	Temperature	pН	Conductivity	Reduction Potential	Oxygen (mg/l)	Turbidity (NTU)	Flow Rate (ml/min).
0	VValei	14 34	5.95	994.20	72.3	0.07	2.6	120
		''-	3.13	111,50	10.	0.01	3,0	300
2					 		 	300
5		10.67	Cair	990	70.1	A) /	 	
		13.87	5.95		71.1	0.6	2.7	300
10	<u> </u>	13.95	5.95	986	69.5	0.5	 	
15		13.69	5.95	987	68.4	0.5	3.0	
20		13.83	593	983	67.5	0.5	4.3	
25	<u> </u>	13.89	5,94	984	67.1	0.4	2.8	
3 0		1389	5.94	981	67.0	0.4	3.4	
	ļ							
							<u> </u>	
								·
		<u> </u>						
			1					
1	 				<u> </u>			
Nater sampl								
Time collecte	d: <u>1030</u>			Total volume of	purged water rem	noved:		
Physical appe	earance at start				Physical appear	ramce at sampling	۵۸. ۵	
	Color Clar					Color Odor	neme	
Sheen/Free P		one			Sheen/Fre	ee Product	1 10100	
.,			·					
Samples col				***************************************	_	*1		
Container Siz	e Contair	ner Type	# Collected	Field Filte		Preservative	Cont	ainer pH
GOUT GOUT	ni Sian	tic motal=	+ +		<u>n</u>	11102	metals	
V 500 r		er vial	1 2		n	itch	VOC S	
V. 0	(147)	a viria .						
Notes:						-		-
IVV /		<u>[</u>		1	20 15-	or House Ca	Hi on 115	

1st Set up to Low flow equipment - purged 1.5 gallons Setting up April 25, 1997 Form developed by total amount purged 3.5 gallons O'Brien & Gere Engineers, Inc.

	<u> </u>					u vvaler Sa	implind Foo	
Date	6/18-01	Perso	nnei	<u> </u>	S TAW	_ Weather	35° Sum	17
Site Name	Sillivan's le	Evacu	ation Method	- Bada	Les Puno	_ Well #	Mw aa	A
ite Location	New Bedfor	\underline{d}^{O} Sampl	ling Method	_ lev	o Flew	Project #	20015.09	
Well informa						·		
epth of Well	•	ft.		* Moseuro	ments taken from			
epth to Wate			Lyde	Weasure	ments taken nom	Top of Mail Con	!	
Length of Wat			utside Kel Caur	Val		Top of Well Cas	_	
		··· ·	ACC COURT	.)	ļ	(Other, Specify)	: Casing	
](,,		
water param	i i	sible pump slowly th						
		in center of screen			ng rate of 0.5 liters	/minute .		
,	Depth Depth	s at every three mir	Tute intervals	1	Oxidation	Dissolved	r	1
ਾ Elapsed	To				Reduction	Oxygen	Turbidity	Flow
me	Water	Temperature	pН	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).
0	9.05	15.76	10.61	1841	-147.5	-0.15	28.5	· · · · · · · · · · · · · · · · · · ·
5	924	13.81	(i. 38	1483	-140.1	0.13	26.6	400
io	923		1	1415		'''''	21.4	500
15	1.00	13.82	6.3		-133.4	0.11		
<u>13</u>	9.00		6.31	1396	-130.4	0.11	16.8	400
-	4,22	14.05	6.30	1371	-1269	0.06	15.5	400
25	1.70	14.17	4.28	1344	- 124.0	0.20	15.5	400
20	9.25	14.01	4.27	1338	-121.4	0.10	14,8	400
35	9.20	1399	4.27	1332	-120.1	0.09	15,0	<i>-</i> <#
- 40	9.30	[4.11	6.26	1324	-118.7	0.05	15.4	Y
45	<u> </u>	14.05	6.26	1319	-11ic.2	0.05	15.4	94
\$ 50	9.20	14.08	425	1308	7115.8	0.04	14.5	
25	9.21	14.05	4.25	1305	-115.3	0.05	19.7	
40	9.19	13.92	6.24	1298	113.8	0.04	17.60	
65	9.20	14.04	6.24	1295	-113.0	0.16	Ke. 2	
70	9.19	14.11	10.23	1292	-112.3	0.08	15.6	
75	9.21	14.15	(0.23	1287	7111.2	0.12	16.2	
								·
						·		
_								
ter sample:								
ime collected:	1240			Total volume of p	urged water remo	ved:	7,590	d
Physical appea	rance at start				Physical appeara	ace at sampling	J	
	Color Gray-Or	anox			·	Color	7,5 ga orange g	ray
	Odor <u>Ovadnic</u>	- strong				Odor	Cracking	
Sheen/Free Pro	oduct Slight				Sheen/Free	Product	Stight	
nples colle	cted:				·			
Container Size	Container	Туре	# Collected	Field Filtere	d	Preservative	Container	рH
100 m	-voc vial	2	み		7	ACI		
0.56-		ofic ,			7	# HILC	10	
10L	-AB's glas	5 amber	<u> </u>		1	nince		
	<u> </u>		···				L	
<u>es:</u>	=	<u>. </u>						

				Low	-low Groun	<u>id Water S</u>	ampling Loc	1
Date	(0-13-01	, Pers	onnel	MAS.	TAM	Weather	80° Humi	d Sunny
Site Name	Sullivan's L	edge Evac	uation Method			Well#	mu-24	<u> </u>
Site Location	New Bedfor	Samp	oling Method			- Project #	20015,09	
Well informa	tion:					_	<u> </u>	
Depth of Well		ft.		* Meacure	ements taken from			
Depth to Wate		03 ft.		Measur	inents taken from	Top of Well Cas		
Length of Wat		ft.			17.03	Top of Protectiv		•
					1110	(Other, Specify)		
Water param	otore: Lewer culture	-i-t						
water hardin		sible pump slowly t in center of screer						
	Collect reading	s at every three mi	nute intervals	maximum pumpi	ng rate of 0.5 liters	s/minute		
	Depth]			Oxidation	Dissolved	Т	· · · · · · · · · · · · · · · · · · ·
Elapsed	То				Reduction	Oxygen	Turbidity	Flow
ime	Water	Temperature	рН	Conductivity	Potential	(mg/l)	(NTU)	Rate (ml/min).
් ව	17.03	17.97	6.77	758	-151.7	10.7	15	100
, iO	17.22	12.93	6.53	7112	-132)	-0,1	95	
15	17.23	13.64	6,53	721	1 27 0			300
20	17.27	14.12	4 .	(037	-134.7	0.3	50.95	380
25	17.28	14.08	6.54		122.8	1.8	10	10° 10°
30			6.52	658	136.2	5.0	1	(;
	11.0	13.75	4,48	(2)4	- 132.4	4.9	80	1.
35	17.30	13.76	6.47	#15	- 1330	6.9	80	41
40	17.31	14.06	647	623	7132.5	4.0	80	``
45	17.31	13.99	6.44	1020	-130,2	3.6	80	٠,
50	17.33	13.95	12.44	596	- 130,5	-1,3	80	4
55	17.32	13.89	6.43	570	-130, 2	-1.5	80	"/
60	17.32	14.11	6.42	561	-130.3	-0.9	80	
			<u> </u>	<u> </u>	,,,,,		ρU	
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				····				
		·						
						-		
ater sample:							11 0	
ime collected:	1440		•	Total volume of p	urged water removes	а .	4 gallor	25
bysical appear		. 0.04.0			Physical appeara	•	\mathcal{O}	
	Color <u>Oraw</u> Odor <u>Oraw</u>					Color	trange	
heen/Free Pro		<u> </u>			Sheen/Free	Odor Product	maame	
					Sileerariee	- Todact		
mples collec	:ted:							
ontainer Size	Container		# Collected	Field Filtere	d l	Preservative	Container	рH
16		- PCB'5	چ) V		Ŋ		
0.50		metals		1		H103		
100ml	uniou V	al-VOC's		r	1	HCI		
	<u>-</u>			<u> </u>			<u> </u>	
les:					·			
	15 10 min.	Nad probi	em Mair	ifaining	pressure	in the	995 April	l 25, 1997
1	.		1 .	1.	1		1 /	

lines. The gas attachment north on the cover should be replaced—it does form developed by not as ciable in the bas fitting.

O'Brien & Gere Engineers, Inc.

	<i>t</i> 1.1 - 1					nd water S	ampli	<u>ng Loc</u>	l.
Date	10-14-01	Perso	onnel	JAN.	MAS	Weather	<u>80° 1</u>	of the	zy Humid
Site Name			uation Method	ler	> Pow	Well #	GCI	7-1	118.0
Site Location	New Bedford	<u>m</u> A Samp	ling Method	<u> </u>	Flow	Project #	200		
Well informat	ion:								
Depth of Well	•	ft.		* Moneyer	ements taken fro				
Depth to Wate		7.73 n. j	λit	Weasure	ments taken fro	-			
Length of Wats		ft.	W.C.			Top of Well Ca Top of Protective			
						(Other, Specify			
	 _			, 			, 		
Water parame		sible pump slowly t	hrough stagna	int water column	ı				· ·
	Position pump	in center of screen	ed interval & n	naximum pumpi	ng rate of 0.5 lite	rs/minute			
	Depth	s at every three mi	nute intervals		Town	T =:		····	T
Elapsed	To		1		Oxidation Reduction	Dissolved	 		
ime	Water	Temperature	рН	Conductivity	Potential	Oxygen (mg/l)	Turbid	-	Flow
17	7.73		(0.28	747	1		(NTU	<u>'</u>	Rate (ml/min).
- 4		15.20			100. 1	2.9	3		400
	7.88	13.40	6.18	1088	-141.3	-0.3	16	,	//
10	796	3.33	6.15	1077	-141.4	-0.3	14		380
15	7.90	13:38	6.15	10108	-141.5	-0.4	12)	380
90	7.91	13,32	6.16	1049	-1417	-0.2	11/		4
35	7.90	13,24	(2.17	1021	-140,8	-0.3	1 2		
_ 3c	7.89	13.32	0.18	997	~ 141.5	-0.3		1	
35	7 95	13 33	6.18	982			 		
				1801	- 141.0	-0.2	18		·
40		13.29	4.19	9.74	-144	-0.2	2	ير.	<u></u>
	· ·			·			<u> </u>		
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						<u> </u>			
·									
ater sample:	1220						-	^	
ime collected:			Т	•	urged water rem	59	5 g	al _	
hysical appeara					Physical appeara	ece at sampling	~ ~		
	dor Shak o	Nov		•		Color	(Jaur	<u> </u>	_
heen/Free Prod	/L!:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	NE V			Shoon/Ero	Odor	Shich	ur daer	
					Sheen/Free	= rioudct			ľ
mples collect	ed:								
ontainer Size	Container		Collected	Field Filtered	•	Preservative		Container (эН
		mber	2	n					
0.56 - M				n		11102			
100 rnl - V	oc's amburi	ial	_2			per			
				<u>-il</u>		-			
es:									
Hick	themiddy tier	biding numb	02/5 11/10	not neces	ate due t	10 condonsat	1700		

High themiddy therbiding numbers are not accurate due to condensation

Appendix D Westbay well sampling logs



Field Data Sheet

Project Sullivan's ledge Location New Bed Ford	Date <u>(0-22-0)</u>
Monitoring Well No. Ect-1 Sampling Zone No. 37' Start Tim	ne <u>930</u> End Time <u>1100'</u>
Water Level In MP Casing: (start) (end) T Sampler Probe Preparation - See Sampling Plan Collection Bottle	echnicians Mas 4m
Collection Bottle	Preparation - See Sampling Plan

				ction	Checks		Position Sample Collection Checks										
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm tand probe	Pressure in MP	Shoe	Pressure in Zone (کر)	Open Valve	Final Zone Pressure (PG ₁)	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved	Comments
1	V		V	V	\/		V	26.89	/	26.31	/	26,22	V	/	2688		Voc's metals
2	V/	<u> </u>	V	_/	1	V		26.79	1	24,29	N	26,27			26.80		P(B's
3	/		ン	سرا	~	1		X1.76		2630		26,25	V		26.75	1	PCB'S Dup VO
4	V ,			V	V .		V	26.75		26.30	V	26.25	V		26.	1	Du P(B's
, (S)		_/			i/	/	V	2623		26.32		26.22	V		26,20	0.75	Dus Metals
							· · · · · · · · · · · · · · · · · · ·										· · · · · · · · · · · · · · · · · · ·
																	
																ı	Total Volume <u> </u>

Field Determinations (Appearance, pH,S.C.,etc.)

Sample time 945 Dup time 12:00

MXSAMPLE2.sam Oct. 96



Field Data Sheet

Project Sullivan's ledge Location New	budfird Date (6-22-0)
Monitoring Well No. ECT-1 Sampling Zone No	じる' Start Time 8:30 End Time 9:20
Complex Drobe Drove	d)Technicians Collection Bottle Preparation - See Sampling Plan

	L		ce Fun	ction	Checks		Position Sampler	Cample Collection Checks									
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		release arm land probe	Pressure in MP (Sy)	Activate Shoe	Pressure in Zone (;>,)	Open Valve	Final Zone Pressure	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved (ニ)	Comments
1	~			<u>'</u>	·/	ب	ــــــــــــــــــــــــــــــــــــــ	37.93	V	36.64	V	36.51	V	V	3791	/	Voels mutals
à	V	1/	/	V	<u>/</u>	'ر:		37.84	$\sqrt{}$	34.63	V	36.51	V	V	37.85	1	metals: PCB's
3		<u> </u>			<u></u>			34.31	/	36.62	V	34.55	V	1		0.25L	RB's
			•														
								<u> </u>									
																	Total Volume_2,25L

Field Determinations (Appearance, pH,S.C.,etc.)

Sample time 8:30

Cable depth (elé



Field Data Sheet

Project Sullivan's Ledge Lo	ocation New Bedford	Date (1-22-01
Monitoring Well No. ECT-1 Sample	ling Zone No. 72 Start Time_	730 End Time <u>\$20</u>
Water Level In MP Casing: (start) Sampler Probe Preparation - See Sam	, , , , , , , , , , , , , , , , , , ,	nicians MAS TAM eparation - See Sampling Plan

				ction	Checks		Position Sampler	Cample Collection Checks									
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm tand probe	Pressure in MP	Activate Shoe	Pressure in Zone (PSI)	Open Valve	Final Zone Pressure	Close	Shoe	Pressure in MP	Volume Retrieved	Comments
		س	<u> </u>	<u>'\</u>		/	V	42.41	V	35.50		35,38		7	42.41	1	Mais metals
2	1		し				V	42.37	V	35,50		35.44	/	/		1	Pre's
3	<u> </u>	<u> </u>	/	<u> </u>				40.82	/	39.48	1	35.38	V	V	40.81	0,256	
 																	
i																	
																•	
																	Total Volume_2.25_L

Field Determinations (Appearance, pH,S.C.,etc.)

Cable depth 76° Sample time 745

MXSAMPLE2.sam Oct. 96



																	Field Data Shed
Proje	ct <u>3/</u>	16616	MANS	isic	Usi	Locat	ion <u><i>Nick</i></u> Zone No.	U BIE	DFOR	2D			Date	e <i>G/</i>	5110	j	
Moni	toring	Well	No. <u>EC</u>	J-1	Sam	pling	Zone No.	127	\ Sta	art Time	4:	35	End T	ime	9 10		
		,, ,,, iA	III Cas	11 IU. 1	Starti		I (=	<u> </u>		10	ישוחחי	lane					
Sam	ושו אוני	obe r	repara	ition -	See Sa	amplir	ng Plan	Col	lection	n Bottle	Prepa	aration -	See S	Sampl	ing Pla	n	
			ce Fun	ction	Checks		Position Sampler			Sar	nple (Collectio	n Che	ecks	· · · · · · · · · · · · · · · · · · ·		
Run No.	Activate Shoe	CIOSE	Check	· ·	Evacuate)	Locate port	1	l .	Pressure	Open	Final Zone	Close	Retract	Pressure	Volume	Comments
140.	3100	Valve	Vacuum	valve	Container	Valve	release arm	in MP (ps;)	Shoe	in Zone	Valve	Pressure (ريون)	Valve	Shoe	in MP	Retrieved (<u></u> し)	
<u> </u>	<u> </u>	_	/		V			64.32	V	56.53	V	54.43		1	64,30	1	vous mifals
2				_				64.26	_	56.53	/	52.45	V	V	64.26		PBS
									ļ								
	! 		ļ		<u> </u>			<u> </u>									
													-				
 -				, .													
	<u></u>															-	Total VolumeZ_L
Field C	etermi	nations	(Appea	rance,	pH,S.C.,	etc.)							-				
			/	1200	bu) 0 - [0	able don	th	Sai	nude to	m	1645	_				



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TTALL	I FCAC	21 III IV	ir casi	IIIU. I	Starti		ion <u>/////</u> Zone No. (e ng Plan	end)		Те	chnic	ઇમછ ians_ aration -					Field Data Shee
			ce Fun	ction	Checks		Position Sampler			Sar	nple (Collectio	n Che	ecks		·	. :
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	i i		Locate port release arm land probe	Pressure in MP	Shoe	Pressure in Zone ()S()	Open Valve	Final Zone Pressure	Close	Retract Shoe	Pressure in MP	Volume Retrieved	Comments
2	シャ	U		レン	اس ا	7		75.41 75.32	7	66.81	1	66.68	ソン	V	75.39 75.30		100's invetal PCB's
·																	
7 blei)etermir	ations	(Appear		pH,S.C.,								·				Total VolumeZ
					545	eic.)	Calor	De	ptu	151							



		Page_Ior_\
Groun	idwater	Sampling

Field Data Sheet

	ricid Data Shee
Project Sullivan's ledge Location New Bedford Date 6-21-01	
Monitoring Well No. [c] Sampling Zone No. 267 Start Time 142 End Time	
Water Level In MP Casing: (start) (end) Technicians MASJAN	•
Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan	

			ce Fun	ction	Checks		Position Sampler	Campic Collection Checks									
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm land probe	Pressure in MP (PS,)	Activate Shoe	Pressure in Zone (ンタ、)	Open Valve	Final Zone Pressure	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved	Comments
				•	<u></u>			128.01	V	129.46	/	129,15	V	V	127,90		Vois routals
2	1.7	·/	V	V	i/		./	127.78		12956	V	129.18			127.71	l	Pars's
ļ			-														
												·					
																·	
						·			 -								
																i i	Total Volume <u>Z</u>

Field Determinations (Appearance, pH,S.C.,etc.)

Cuble depth 272 Cample time 1445



Field Data Sheet

Project Sullivan's Ledge Location New Bedford	Date &-20-0
Monitoring Well No. <u>F(T-a O</u> Sampling Zone No. <u> </u>	End Time 1530
	TAN WITS
Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparat	on - See Sampling Plan

	,	Surfac	e Fund	ction	Checks		Position Sampler										
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm land probe	Pressure in MP (D3)	Activate Shoe	Pressure in Zone ()	Open Valve	Final Zone Pressure (pg)	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved	Comments
1	<u></u>		<u></u>				/	32,48		33.5 6 3	1/	33.56			32,48	1	Vacs freetals
2	V			~		/	-/-	32.46		33.58	<u>/</u>	33,55	ン		32.460	1	MBS
3	レ	-						32.42		35.57		33.56		>	32,44	j	VOCS & Metals
1		_ <u>'</u>		<u></u>	· /	/	<u> </u>	32.41	·/	33.58	/	33,55	/		3242	1	PCB's
5	V		/			.1/	·/	30.85	V	33.57	V	33.56	/	V	30,87	250mL	
<u> </u>		_															
	<u> </u>													·			
													·				Total Volume <u>4.25し</u>

Field Determinations (Appearance, pH,S.C.,etc.)

EU-2-47' sample time 1420

Slight Sulfur oder

Dup*3 collected here time 1200



Wate	oring r Leve	vveii i el In M	No. <u>단</u> IP Cas	<u>/၂</u> ing: ((JSam (start)	pling	ion Zone No. (e	. <u>82'</u> end)	Sta	art Time Te	chnic	ians 📆	n m	AC			
:	,	Surfac	ce Fun	ction	Checks	· · · · · ·	Position Sampler			Sar	nple (Collectio	n Che	ecks			
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container	Close Valve	Locate port release arm land probe	Pressure in MP (Pン・)	Activate Shoe	Pressure in Zone ()	Open Valve	Final Zone Pressure	Close Valve	Retract Shoe	Pressure in MP (シシ)	Volume Retrieved	Comments
1	<u></u>							47.79		49.45	V	49.06	W	ン	47.81	1	let's 's neitals
2		1	1	<u></u>		1		47.74	~	4942	·/	4923	V	/	4776	1	
	·			ļ 		-	<u> </u>				ļ <u>.</u>						
	<u>.</u>	ļ	<u> </u>														
					-						ļ			!			
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						· ·				"							
						· .											-
							·				,						Total



<i>;</i>	Page	_or
roundwater	Sampl	ina

Field Data Sheet

Project Sullivan's ledge Location New Monitoring Well No. ECT 2-117 Sampling Zone No.	Date 1000 Date 1000	-
Water Level In MP Casing: (start) (end Sampler Probe Preparation - See Sampling Plan		

	(Surfac	e Fund	ction	Checks		Position Sampler		-								
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm land probe	Pressure in MP (パン、)	Shoe	Pressure in Zone	Open Valve	Final Zone Pressure	Close Valve	Retract Shoe	Pressure in MP (「ろい)	Volume Retrieved (レ)	Comments
	V	/	V	レ	\/	レ		62.86	V	64.38	V	63.56		/	62.92	1	Mais's Metals
3	V		✓	/	V	/		62.86	V	64,29	/	43.34		V	62.87		PBS
3						_											PEBS
ļ					·												
· ·																	
								· ·						·			
					, ,												Total Volume_3L

Field Determinations (Appearance, pH,S.C.,etc.)

Sample time 1015



Project Sullivan's Ledge Location New	Bedford, MA Date 6-20-01
Monitoring Well No. <u>とけっ.</u> Sampling Zone No	152 Start Time 9:00 End Time 1000
Water Level In MP Casing: (start) (en	
Sampler Probe Preparation - See Sampling Plan	Collection Bottle Preparation - See Sampling Plan

		Surfac	e Fund	ction	Checks		Position Sampler										
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container	Close Valve	Locate port release arm land probe	Pressure in MP (🏋≶。)	Activate Shoe	Pressure in Zone (PS1)	Open Valve	Final Zone Pressure (75)	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved	Comments
	· /	س		س	<u></u>	ر	₩	77.5	V	79.50	1	77.66	1	V	77.51	14	Mis osumetals
2	1,//-		<u> </u>				/	77.50	✓	78,90	>	77,05	>	V	DI ALT	IL	PLB's
3	ン	~			<u></u>	レ	~	76.45	/	78.62	/	77.57	1	~	76.46	0.5L	PCB'S
-																	
-																	

-			· ·		·												
			,														Total Volume



Project Sullivaries Ledge Location New Bedford	Date 6-9-01
Monitoring Well No. 12 Sampling Zone No. 187 Start Time	
O 1 D 1 D 1	nicians DIA TAN
Sampler Probe Preparation - See Sampling Plan Collection Bottle Pr	eparation - See Sampling Plan

	,	Surfac	e Fund	ction	Checks		Position Sampler			San	nple (Collectio	n Çhe	ecks			
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm land probe	Pressure in MP ()	Activate Shoe	Pressure in Zone ()	Open Valve	Final Zone Pressure ()	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved ()	Comments
	/	\mathcal{V}	<u> </u>	1	~	レ	レ	92.11	レ	93.41	ノ	9260	v	レ	71.73	ゴレ	
	V	V	V	<u> </u>	V	W	V	વા મહ	V	93.43	1	91.15	L	V	91.64	11	
	V	~		レ			~	91.53	V	92.71	\	91.22	ン	~	91.55	11	
									·								
						· · · · · · · · · · · · · · · · · · ·											
						-											
			··-														
																	Total Volume_3L



Field Data Sheet

Project Sylvan's ledge Location Me	v Sedford Date 4-21-01
Monitoring Well No. <u>ECJ-3</u> Sampling Zone No.	51 Start Time 1090 End Time (400
	nd)Technicians_TM_MAS
Sampler Probe Preparation - See Sampling Plan	Collection Bottle Preparation - See Sampling Plan

		Surfac	ce Fun	ction	Checks		Position Sampler			Sar	nple (Collectio	n Che	ecks		-	
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container	Close Valve	Locate port release arm land probe	Pressure in MP (PS()	Activate Shoe	Pressure in Zone (75;)	Open Valve	Final Zone Pressure ()	Close Valve	Retract Shoe	Pressure in MP (ワット)	Volume Retrieved	Comments
		1	\ \		\ \		./	22.14	V	3138	V	31.33	/	1	22.17		Vai metals
2	1	1		<i></i>		./	11/	22.12	/	31.36	/	31.38	V	V	22.16		PCB'S & MSm
3	/			V				22.13		31.39	1	31.34	<	\checkmark	22.14	Ì	Ms- Voc's Sme
4	\checkmark						<u> </u>	22.11		31.38		31.31	/		22.12	. i	IAG - DCDI-
5		V	✓	V	V	V	/	22.10	V	31.37	/	31,34		-	22.11		MBD-wetals
6	· /	~		_ <u>レ</u>	<u></u>			2208	/	31.37	\checkmark	31.29	V	V	2208	_\	MSD PIBS
																- 1	Total Volume (a L

Field Determinations (Appearance, pH,S.C.,etc.)

Cable Depth = 62' Sample udlected @ 11:00

MS-collected @ 11:15

mso-colleged @ 1150

MXSAMPLE2.sam Oct. 97



Project Sullivan's Ledge		New be	ford		Date (- 21-€ 1
Monitoring Well No. ECT.3	Sampling Zon	e No. <u>9ì</u>	Start Time_	0950	End Time 1020
Water Level In MP Casing:		(end)			Mn. mis
Sampler Probe Preparation	See Sampling Pl	an Coll	ection Bottle P	reparation	- See Sampling Plan

		Surfac	ce Fun	ction	Checks		Position Sampler			San	nple (Collectio	n Che	ecks			
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm land probe	Pressure in MP (つら)	Activate Shoe	Pressure in Zone ((25)	Open Valve	Final Zone Pressure (いろ)	Close Valve	Retract Shoe	Pressure in MP (P51)	Volume Retrieved	Comments
	V	\	✓ .	/	1/	<u>,</u>	J	39.65		48.56	/	48.54		/	39.46	1	voc's 's nefals
12	/					/		39.13	/	48.X	/	48,54				0.75	PCB's
							·										
	! 																
			-														
													-				
-																	
														·			
-																	
							·										Total Volume 175L



Cable Depth = 138' . Sample time 815

	Page	of	<u> </u>
Groundwater	Samn	lin	a

Field Data Sheet

		-															
Proje	ct_S _u	llivai	is led	ge.	l	_ocati	ion <u>Neu</u> Zone No.	Bed	ford				Date	6-0	21-01		•
Moni	toring	Well	NoE	(3.3	Sam	pling	Zone No.	126'	Sta	art Time	810	<u> </u>	nd T	ime _			
VVUIC	I LCVC	·! 1!!! ! V	II Vas	"''y. (olai I/		(6	ii lu)		160	SHI HCI	ans the	11. 1916	የን			·
Sam	oler Pr	ope F	'repara	tion -	See Sa	ımplir	ng Plan	Col	lection	Bottle	Prepa	aration -	See S	Sampl	ing Pla	n	
		Surfa	ce Fun	ction	Checks		Position Sampler			San	nple (Collection	n Che	ecks			
Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container	Close Valve	Locate port release arm land probe	Pressure in MP (PS))	Shoe	Pressure in Zone (PS)	Open Valve	Final Zone Pressure (pg;)	Close Valve		Pressure in MP (psi)	Volume Retrieved	Comments
	~	~	~	1	~	レ	V	54.98		63.71	/	63.69	V	1		1	voc's 'z metals
2	V	~	/	/		<u>ر</u>		3495	/	6370	/	6366		V	5496	1	PCBS
<u> </u>				ļ 													
ļ																	
																	·
																	,
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Run No.	Activate Shoe	Close Valve	Check Vacuum	Open Valve	Evacuate Container		Locate port release arm land probe	Pressure in MP ()	Activate Shoe	Pressure in Zone ()	Open Valve	Final Zone Pressure	Close Valve	Retract Shoe	Pressure in MP	Volume Retrieved	Comments
	~	レ	V	レ	7	V	V	45.64	~	50.85	1	50.95	W	Qoor	4512	1 Liter	
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Groundwater Sampling Field Data Sheet

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vvaler Level III IVIP Casing: (start) 21 (41 (end) 3 Tochnicions 70% -44	
Sampler Probe Preparation - See Sampling Plan Collection Bottle Preparation - See Sampling Plan	

			ce Fun	ction	Checks		Position Sampler	Sample Collection Checks									
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Z			ノ		V	レ	V	113.78	V	119.73		119.06	V			1/2 Liter	•
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Field Determinations (Appearance, pH,S.C.,etc.)

Data validation report

SULLIVAN'S LEDGE SUPERFUND SITE GROUND WATER DATA VALIDATION SUMMER 2001 ROUND

SULLIVAN'S LEDGE PROJECT MANAGEMENT COMMITTEE

NOVEMBER 2001

REPORT

SULLIVAN'S LEDGE SUPERFUND SITE GROUND WATER DATA VALIDATION SUMMER 2001 ROUND

SULLIVAN'S LEDGE PROJECT MANAGEMENT COMMITTEE

JAMES R. HECKATHORNE, P.E. VICE PRESIDENT

November 2001



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1. Introduction

Data validation was performed for the ground water samples collected from the Sullivan's Ledge Site in New Bedford, Massachusetts between June 13 and August 8, 2001. Mabbett & Associates (M&A) performed sample collection activities. Samples were validated for volatile organic compounds, polychlorinated biphenyls (PCBs), and metals. Data validation was performed in accordance with Section 3 of the Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) First Operable Unit (O'Brien & Gere Engineers, January 2000), and M&A letters dated March 14, 2001 and July 20, 2001, presenting modifications and clarifications to the FSP, and Alpha Analytical Laboratory's (Alpha) Quality Manual (QM).

1.1. General considerations

Validation is a process of determining the suitability of a measurement system for providing useful analytical data. Although the term is frequently used in discussing analytical methods, it applies to all aspects of the process and especially to the samples, their measurement, and the actual data generated. Accordingly, this report outlines excursions from the applicable quality control outlined in the following documents:

- Field Sampling Plan (FSP) and Quality Assurance Project and Quality Assurance Project Plan (QAPP) First Operable Unit, Sullivan's Ledge Site, New Bedford, Massachusetts (O'Brien & Gere, January 2000) as modified by M&A's letter dated March 14, 2001 and Alpha Analytical Laboratory Quality Manual (Alpha Analytical, October 2000).
- Test Methods for Evaluating Solid Wastes: Physical and Chemical Methods, SW-846, Final Update III, (USEPA, December 1996).
- Region I USEPA-New England (NE) Data Validation Functional Guidelines for Evaluating Environmental Analyses, Part II, Volatile/Semivolatile Data Validation Functional Guidelines (USEPA Region I, December 1996).
- USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluation of Organic Analyses (USEPA Region I, November 1988).

- USEPA Region I Laboratory Data Validation Functional Guidelines for Evaluation of Inorganic Analyses (USEPA Region I, February 1989).
- USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), 540/1-89/002 (USEPA, revised 1992).

The following sections of this document address distinct aspects of the validation process. Section 2 lists the analytical methodology employed in sample analysis. Section 3 lists the data quality assurance/quality control (QA/QC) protocols used to validate the sample data. Specific QA/QC excursions and qualifications performed on the sample data are discussed in Section 4. Data usability with respect to the intended purposes of the data is discussed in Section 5.

2. Analytical methods

Samples were analyzed by Alpha Analytical Laboratories for selected target compounds utilizing the USEPA methods presented in Test Methods for Evaluating Solid Waste (USEPA, December 1996) shown in Table 2.1.

Parameter	Analytical Method
Volatile organic compounds (74 target)	8260B
PCBs	8082
Metals (23 target)	6010B
Mercury	7470A

It should be noted that PCB analyses were not performed for the fourteen ground water locations sampled on June 15, 18, and 19, 2001as described in M&A letter dated July 20, 2001.

Analytical results are presented in Appendix A. The letters found immediately to the right of individual sample results serve to qualify the sample data. When the data validation process identified more than one quality control deficiency, the qualifier added to the sample result represents the cumulative effect of the individual QC excursions. Consistent with the listed guidance document, the following qualifiers may be used during the data validation:

- U Indicates that the compound was analyzed for, but was not detected. The quantitation limit is presented and adjusted for dilution. This qualifier is also used when the quantitation limit is raised due to presence of blank contamination.
- J Indicates that the detected sample result should be considered approximate. This qualifier is used when the data validation process identifies a deficiency in the data generation process.
- UJ Indicates that the detection limit for the analyte in this sample should be considered approximate. This qualifier is used when the data validation process identifies a deficiency in the data generation process.
- R Indicates that the previously reported detection limits or sample result was rejected due to a major deficiency in the data generation procedure. The data should not be used for qualitative or quantitative purposes.

3. Data validation protocols

Quality control data were evaluated based on accuracy and precision criteria specified in Section 3.3 of the site specific FSP and QAPP and Alpha's QM. The following are method specific QA/QC parameters used in the validation of sample data generated for this investigation:

Volatile and PCB analyses

- Holding times and sample preservation
- GC/MS tuning criteria (as applicable)
- Initial and continuing calibration
- Blank analysis
- Surrogate recovery
- Internal standard performance (as applicable)
- Matrix spike/matrix spike duplicate (MS/MSD) analysis
- Field duplicate analysis
- Laboratory control sample (LCS) analysis
- System performance
- Target compound identification, quantitation, and reporting limits
- Documentation completeness
- Overall data assessment

Metals analyses

- Holding times and sample preservation
- Initial and continuing calibration
- Interference check standard analysis
- Blank analysis
- Matrix spike (MS) analysis
- Laboratory duplicate analysis
- Serial dilution analysis
- Field duplicate analysis
- LCS analysis
- Analyte quantitation and reporting limits
- Documentation completeness
- Overall data assessment

In accordance with the QAPP, laboratory control limits were used to assess MS/MSD, LCS, surrogate, and laboratory duplicate data. Field duplicate data were assessed based

requirements specified in the QAPP. Based on guidance provided in EPA Region I's validation guidelines (USEPA Region I, November 1988, February 1989, December 1996), analytical data were qualified in the following manner when laboratory control limits were not met:

- If percent recoveries were less than laboratory control limits but greater than ten percent, non-detected and detected results were qualified as approximate (UJ, J).
- If percent recoveries were greater than laboratory control limits, detected results were qualified as approximate (J).
- If percent recoveries were less than ten percent, detected results were qualified as approximate (J) and non-detected results were qualified as rejected (R).
- If relative percent differences (RPDs) for MSDs and laboratory duplicates were outside of laboratory control limits, detected results greater than the laboratory reporting limit were qualified as approximate (J).
- If RPDs were >50% (>± 2xMRL for results <5xMRL) for field duplicates, detected results greater than the MRL were qualified as approximate (J).

It should be noted that qualification of data for MS/MSD analyses was performed only when both MS and MSD percent recoveries were outside of laboratory control limits. Qualification of data was not performed if MS/MSD or surrogate recoveries were outside of laboratory control limits due to sample dilution. Additionally, for MS/MSD and field duplicate excursions for organic analyses qualifications of data was limited for the unspiked sample or the field duplicate pair unless otherwise stated.

4. Data quality evaluation

This section summarizes the QA/QC parameters which met validation criteria and describes qualifications performed on sample data when QA/QC criteria were not met. Samples that required qualification are identified in the following sections by the sample location documented on the field chain of custody record. Equipment and trip blank data were used to assess contamination that may have been introduced during field sampling and sample shipment and were not qualified with respect to QA/QC excursions.

Field chain of custody records were accurate and complete. Cooler temperatures met requirements.

A total of forty-two ground water locations were sampled. Field duplicate (ten percent), MS/MSD (five percent), equipment blanks (EB) and trip blanks (TB) were collected at the frequency specified in Section 2.6.6 of the site specific FSP and QAPP. Dedicated sampling equipment was used to collect the ground water samples with the exception of the Westbay wells. An equipment blank was collected from the Westbay sampling equipment as required. Table 4.1 summarizes the field QC samples that were collected.

Field Duplicate IDs	MS/MSD ID	Equipment Blank	Trip Blanks
DUP1 = MW-6 DUP2 = MW-6A DUP3 = ECJ-2-47' DUP4 = ECJ-1-37' DUP1 (8/8/01)= MW-8	ECJ-3-51' MW-8A MW-10B (MS/MSD VOC) MW-16(lab dup for metals, MS/MSD VOC) M-15(MS for metals) ECJ_2-152'(lab dup for metals and MS/MSD for PCBs) ECJ-2-117'(MS for metals) MW-4A (MS/lab dup for metals) MW-12AR(lab dup for metals and MS/MSD for PCBs) GCA-1(MS for metals)	6/22/01	6/14/01 6/15/01 6/19/01 6/21/01 6/22/01 8/10/01

Table Notes:

- 1. Trip blanks were identified by date received. A trip blank was present in each sample cooler containing volatile organic samples as required.
- 2. Additional MS/MSD samples were analyzed by the laboratory to meet internal QA/QC batch requirements.

Source: O'Brien & Gere Engineers, Inc.

4.1. Volatile organic analyses

The following QA/QC parameters met validation criteria or did not result in qualification of data:

- Holding times and sample preservation
- GC/MS tuning criteria
- Initial and continuing calibration
- Blank analysis
- Surrogate recovery
- Internal standard performance
- MS/MSD analysis
- Field duplicate analysis
- LCS analysis
- System performance
- Target compound identification, quantitation, and reporting limits
- Documentation completeness

Continuing calibration/LCS analysis. It should be noted that the LCS and continuing calibration standards are the same analytical run. Since continuing calibration standards were prepared from a source independent from the initial calibration standards, additional LCS analyses were not required. Continuing calibration percent differences (%Ds) were evaluated in place of LCS recoveries. %D criterion (<25%) was exceeded in several instances. Table 4.2 is a summary of the data qualified. Laboratory corrective actions were not required since methodspecified requirements were met for system performance check compounds (SPCCs) and calibration check compounds (CCCs).

Analysis Date	Compound	%D	Action	Samples Affected					
6/25/01 10:19	acetone	29.3	UJ	MW-16, MW-15, MW-24, MW-2, MW-14,					
	vinyl acetate	26.5	UJ	MW-12AR, GCA-1, MW-10, MW-5A, MW-5					
	2-butanone	27.1	UJ	, , , , , , , , , , , , , , , , , , , ,					
	2-hexanone	29.3	UJ	1					
6/26/01 10:12	acetone	31.3	UJ	MW-13, MW-4, MW-4A, MW-22A, MW-13A					
	methyl iodine	30.3	UJ	MW-17, MW-10A, MW-6, DUP1(MW-6)					
	vinyl acetate	33.0	UJ)					
	2-butanone	33.0	UJ						
	2-hexanone	35.1	UJ						
6/28/01 15:33	bromomethane	49.7	UJ	MW-10B, MW-6A, DUP2(MW-6A),					
	methyl iodine Gere Engineers, Inc.	32.2	UJ	ECJ-2-187', ECJ-2-152', ECJ-2-117', ECJ-2-82', DUP3(ECJ-2-47'), ECJ-2-47'					

MS/MSD analyses. Percent recoveries were outside of laboratory control limits in several instances. Table 4.3 is a summary of the data that required qualification.

MS/MSD ID	Compound	%Recovery	Action	Samples Affected
MW-10B	acetone	51, 51	UJ	MW-10B
	2-butanone	55. 54	UJ	
	2-hexanone	57, 57	UJ	
MW-8A	dichlorodifluoromethane	57, 53	UJ	MW-8A
	acetone	38, 40	ÜĴ	
	2-butanone	44, 48	ÜĴ	
	4-methyl-2-pentanone	54, 58	ÜJ	
	2-hexanone	33, 37	ÜĴ	

Target compound identification, quantitation, and reporting limits. Elevated reporting limits were reported for several ground water samples based on sample dilutions performed prior to analysis. Dilutions were performed by the laboratory based on historical data and are documented on the data validation summary tables. Overall, sample dilutions were performed at the appropriate levels.

Overall data assessment. Volatile analyses and QA/QC procedures were performed in accordance with analytical method and QAPP requirements. Volatile data are useable for qualitative and quantitative purposes. Nondetected results were qualified as approximate (UJ) for several compounds and samples based on minor excursions from continuing calibration and MS/MSD recovery requirements.

4.2. PCB analyses

The following QA/QC parameters met criteria or did not result in qualification of data:

- Holding times and sample preservation
- Initial and continuing calibration
- Blank analysis
- MS/MSD analysis
- Field duplicate analysis
- LCS analysis
- System performance
- Target compound identification and reporting limits.
- Documentation completeness

Surrogate recovery. Surrogate recoveries were not within laboratory control limits in several instances. Qualification of data was not required since one to the two surrogates met criteria and percent recoveries were greater than ten percent.

Target compound quantitation. Detected results were qualified as approximate if the percent difference (%D) was greater than 40% between the reported result and the confirmation result. Table 4.4 is a summary of the data qualified.

Sample ID	PCB Aroclor	%D	Action
ECJ-1-37'	1254	117%, interferences present on confirmation column.	J
DUP4 (ECJ-1-27')	1254	107%, interferences present on confirmation column.	J

Overall data assessment. PCB analyses and QA/QC procedures were performed in accordance with analytical method and QAPP requirements. PCB data are usable for qualitative and quantitative purposes. Detected results for PCB Aroclor 1254 were qualified as approximate (J) in sample ECJ-1-37' and its corresponding field duplicate based on differences between primary and confirmation column results.

4.3. Metal analyses

The following QA/QC parameters met criteria or did not result in qualification of data:

- Sample preservation
- Initial calibration
- Blank analysis
- Interference check standard analysis
- MS analysis
- Laboratory duplicate analysis
- Serial dilution analysis
- LCS analysis
- Field duplicate analysis
- Analyte quantitation and reporting limits
- Documentation completeness

Holding time. Mercury was analyzed one day over holding time requirement of twenty-eight days for sample MW-24. Mercury results were not qualified regarding this excursion since holding time was exceeded by only one day.

Continuing calibration. The percent recovery for chromium (175%) was biased above method criterion (80% to 120%) for the reporting limit check standard analyzed on August 21, 2001. Therefore, the detected result for chromium was qualified as approximate in sample MW-8A.

Overall data assessment. The laboratory performed metal analyses and QA/QC procedures in accordance with analytical method and QAPP requirements. Metals data are usable for qualitative and quantitative purposes. The detected result for chromium was qualified as approximate in sample MW-8A based on a minor excursion from continuing calibration requirements.

5. Data usability

Analytical data were validated for samples collected from the Sullivan's Ledge Site in New Bedford, Massachusetts. Ground water samples and ground water treatment plant influent samples were validated for volatile organic compounds, PCBs, and metals based on accuracy and precision criteria specified in documents referenced in Section 1. When excursions were observed from QA/QC requirements, the analytical data were qualified based on guidance provided in the USEPA Region I validation guidelines (USEPA Region I, November 1988, February 1989, December 1996).

Rejected data resulted from a major excursion from QA/QC criteria and should not be used for either qualitative or quantitative purposes. Minor deficiencies in the data generation process resulted in approximation of sample data. Approximation of a data point indicates uncertainty in the reported concentration of the analyte, but not its assigned identity. The conservative assumptions used in the development of conclusions based on the analytical data verifies that approximated analytical data adheres to the project data quality objectives. This approach to the use of analytical data is consistent with the guidance presented in the USEPA Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A), 540/1-89/002 (USEPA, December 1992).

This section summarizes the adherence of the analytical data to the data quality objectives (DQOs) established in the QAPP for precision, accuracy, representativeness, comparability, completeness, and sensitivity. A detailed discussion of the analytes and samples which were qualified is presented in Section 4. Summary tables of validated sample results with data validation qualifiers have been provided in Appendix A of this report.

Data quality objectives were evaluated using percent usability, defined as the percentage of sample results that are usable for qualitative and quantitative purposes.

Precision was assessed from laboratory MSD and field duplicate analyses. Data usability with respect to precision was calculated as 100%.

Accuracy was assessed from GC/MS tuning, calibration, surrogate recovery, internal standard performance MS/MSD, and LCS data. Data usability with respect to accuracy was calculated as 100%. Minor excursions from continuing calibration, matrix spike recovery requirements resulted in approximation of sample data as follows:

• acetone, 2-butanone, 2-hexanone, and vinyl acetate in 21 to 22 samples.

- bromomethane in nine samples.
- methyl iodine in eighteen samples.
- 4-methyl-2-pentanone and dichlorodifluormethane in one sample.
- Chromium result in sample MW-8A.

Representativeness was assessed from holding times, sample preservation, blank analysis, target compound identification and quantitation, and sampling and analytical methodologies used. Data usability with respect to representativeness was 100%. Detected results for PCB Aroclor 1254 were qualified as approximate in sample ECJ-1-37' and its corresponding field duplicate based on differences between primary and confirmation column results.

Comparability is a qualitative measure, therefore, usability calculations were not performed. Comparability requirements were met since standard analytical methods, reporting units, reference materials, and data deliverables were utilized by the laboratory.

Sensitivity requirements were met for metal and PCB analyses. Laboratory reporting limits were elevated for volatile organic compounds in twenty-one samples based on the laboratory dilutions performed to obtain concentrations within the linear calibration range. Overall, sample dilutions were performed in accordance with method requirements and were based on historical data.

Data completeness was calculated as 100%, exceeding the 95% requirement established in the QAPP.



	Sample ID SDG ID Dilution Factor	ECJ-1-122' L0105697 100	ECJ-1-148' L0105697 1000	ECJ-1-267' L0105697 5	ECJ-1-37 DUP L0105697 5	ECJ-1-37' L0105697	ECJ-1-62' L0105697	ECJ-1-72' L0105697 400	ECJ-2-117, L0105640 400	ECJ-2-152' L0105640 100	ECJ-2-187' L0105542
• •	Sample Date	06/21/01	06/21/01	06/21/01	06/22/01	06/22/01	06/22/01	06/22/01	06/20/01	06/20/01	06/19/01
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
1,1,1,2-Tetrachloroethane		50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U		
1,1,1-Trichloroethane		50 U	500 U	0.5 U	2.5 U	2.5 ℃	50 U	200 U		50 U	0.5 U
1,1,2,2-Tetrachloroethane		50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U 200 U	SO U	0.5 U
1,1,2-Trichloroethane		75 U	750 U	0.75 U	3.8 U	3.8 U	75 U	300 U	200 U	50 U	0.5 U
1,1-Dichloroethane		75 U	750 U	0.75 U	3.8 U	3.8 U	75 U	300 U		75 U	0.75 U
1,1-Dichloroethene		50 U	500 U	0.5 U	2.5 Ü	2.5 U	50 U	200 U	300 U	75 U	0.75 U
1,1-Dichloropropene		250 U	2500 U	2.5 U	12 U	12 U	250 U	200 U	200 U	50 U	0.5 U
1,2,3-Trichlorobenzene		250 U	2500 U	2:5 U	12 ປັ		250 U		1000 U	250 U	2.5 U
1,2,3-Trichloropropane		500 U	5000 U	5 U .	25 U	25 U	500 U	1000 U	1000 U	250 U	2.5 U
1,2,4-Trichlorobenzene		250 U	2500 U	2.5 U	12 U	12 U	250 U	2000 U	2000 ℧	500 U	5 U
Benzene, 1,2,4-trimethyl	and the second of the second o	250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 ປ	250 U	2.5 U
Dibromochloropropane		250 U	2500 U	2.5 Ú	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
1,2-Dibromoethane (EDB)		250 U	2500 U	2.5 U	12 U	12 U	NAMES AND A STATE OF THE PROPERTY OF THE PROPE	1000 U	1000 U	250 U	2.5 U
1,2-Dichlorobenzene		250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
1,2-Dichloroethane	and the second of the second of the	50 U	500 U	0.5 U	2.5 U	2.5 U	250 U	1000 U	1000 U	250 U	2.5 U
1,2-Dichloropropane	\$000-888-088-088-088-	180 U	1800 U	1.8 U	8.8 U	2.3 U 8.8 U	50 U	200 U	200 U	50 U	0.5 U
Benzene, 1,3,5-trimethyl-	u sustantian autori nationed	250 U	2500 U	2.5 Ų	12 U	BERRY LA BER CHIMBE.	180 U	700 U	700 U	180 U	1.8 U
1,3-Dichlorobenzene		250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
1,3-Dichloropropane	997-2-779713-6U6691111	250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 Ü
1,4-Dichlorobenzene		250 U	2500 U	2.5 U	12 Ü	12 U	250 U	1000 U	1000 U	250 U	2.5 U
1,4-Dichlorobutane	van var i sanada basakaba a	500 U	5000 U	2.9 U		12 U	250 U	1000 U	1000 U	250 U	2.5 U
2,2-Dichloropropane		250 U	2500 U	2.5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
2-Butanone (MEK)	roughes to indica processingly	500 U	5000 U	2.3.U 5.U	12 U	12 U	250 U	1000 U	1000 U	250 Ü	2.5 U
2-Hexanone		500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
4-Methyl-2-pentanone (MIBK)		500 U	5000 U	PROGRAMMENT DESCRIPTION OF THE PROGRAMMENT OF THE P	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
Acetone		500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 ປ	920	5 U
Acrolein		1200 U	dudu haad busahbadsashbadsab ee sibse	5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
Acrylonitrile	60866708600588008801	500 U	12000 U 5000 U	12 U	62 U	62 U	1200 U	5000 ป	5000 U	1200 U	12 U
Benzene	are contract and applicable	400	r fallafreg prin mark ut fless fregst fre strikt.	5 U	25 U .	25 U	500 U	2000 U	2000 U	500 U	
Bromobenzene		250 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	1.8
Bromochloromethane			2500 U	2:5 U	12 U	12 Ü	250 U	1000 U	1000 U	250 U	2.5 U
Bromodichloromethane	60,000,000,000,000,000	250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
Bromoform		50 U	500 U	0.5 U	2.5 U	2.5 Ü	50 U	200 U	200 U	50 U	0.5 U
Bromomethane	0000-000-000-00	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	. 200 U	50 U	0.5 U
Carbon disulfide		100 U	1000 U	ıυ	SU	5 U	100 U	400 U	400 UJ	100 UJ	ຼ້າ ນັ້ນ ເ
NOTES: II not detected 1 action		500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U

NOTES:

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	Sample ID SDG ID Dilution Factor	ECJ-1-122' L0105697 100	ECJ-1-148' L0105697	ECJ-1-267' L0105697	ECJ-1-37 DUP L0105697	ECJ-1-37' L0105697	ECJ-1-62' L0105697	ECJ-1-72' L0105697	ECJ-2-117' L0105640	ECJ-2-152' L0105640	ECJ-2-187' L0105542
	Sample Date	06/21/01	1000 06/21/01	5	5	1 .	10	400	400	100	1
	Units	ug/L		06/21/01	06/22/01	06/22/01	06/22/01	06/22/01	06/20/01	06/20/01	06/19/01
Compound	Matrix	WATER	ug/L WATER	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Carbon tetrachloride	Matrix			WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Chlorobenzene	December consumer on the	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 U
Chloroethane		180	500 U	0. 5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.97
Chloroform	Latitude deur taana www.eenvaau.aa.an	100 U	1000 U	1 U	5 U	5 U	100 U	400 U	400 U	100 U	1 U
Chloromethane		75 U	750 U	0.75 U	3.8 U	3,8 U	75 U	300 U	300 U	75 U	0,75 ป
Dibromochloromethane		250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
Dibromomethane		50 U	500 U	0.5 U	2.5 Ų	2.5 U	50 Ü	200 U	200 U	50 U	0.5 U
Dichlorodifluoromethane	Silvedali (Analandarus teasaa)	500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
Diethyl ether		500 U	5000 U	5 U	25 U	25 U	500 Ü	2000 U	2000 U	500 ป	s ប
Ethyl methacrylate	distributur (n. 15. distri	250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
Ethylbenzene		500 U	5000 U	.5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	and its units in
Hexachlorobutadiene	1930:81384-21. P.O. / 1950: Phose	830 	4100	1.2	2.5 U	2.5 U	50 U	790	1700	100	888: 40: 50: 60: 60: 60: 60: 60: 60: 60: 60: 60: 6
Methyl iodide		250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
MCMAN AND CONTRACTOR OF STREET	-69694 J.20: J. 186, J.46: 3660 to 56660	500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 UJ	500 UJ	5 UJ
Isopropylbenzene Methyl tert butyl ether		50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	SO U	0.5 U
Methylene chloride	h:::::::::::::::::::::::::::::::::::::	100 U	1000 U	1 U	5 U	5 U	100 U	400 U	400 U	100 U	t U
\$\$\$\$\$\$\$\$\$\$ TV\$\$ V\$\$ \$600\$ 04000 4600000000\$ \$60 \$600		500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
Naphthalene Styrene	99-911999-99990-2-5605-99956	250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
Tetrachloroethene		50 U	500 U	0.5 U	2.5 U	2.5 U	SO U	200 U	200 U	50 U	Balois (1093aa)
Tetrahydrofuran	So - 900900000000000000000000000000000000	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 ป
Toluene		1000 U	10000 []	100	50 U	50 U	1000 U	4000 U	4000 U	1000 U	10.0
Trichloroethene	Sec 1995 1955 Du 1950 000 000 000 000	110 Frivida Inc. 20000000000000000	3900		3.8 U	3.8 U	75 U	360	1700	320	14
Trichlorofluoromethane		- 50 U	500 U	29	2.5 U	2.5 U	50 บ	200 U	200 U	50 U	Sazzania KS
	Muddagguouddauddabaannaar y na	250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 U	1000 U	250 U	2.5 U
Vinyl acetate		500 U	5000 U	5 U	25 U	25 U	500 U	2000 U	2000 U	500 U	5 U
Vinyl chloride	Dispesses essentamenten en en en	3200	6500	1.5	12	15	1200	8900	21000	4500	16
cis-1,2-Dichloroethene		3500	88000	7.1	51	49	4100	27000	26000	340	MCSSi <mark>4</mark> NCSS
cis-1,3-Dichloropropylene	5565 5555 55 - 15 - 15 1 1 1 1 1 1 1 1 1 1	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 U
n-Butylbenzene		50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	○ () 0.5 ()
n-Propylbenzene	Sulfest haphophod abbodobou v hywyy	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 U
2-Chlorotokiene		250 U	2500 U	2.5 U	12 U	12 U	250 U	1000 Ú	1000 U	250 U	2.5 U . ∵
o-Xylene	bibboon noon wat taare noone sees was well-	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 U
4-Chlorotoluene		250 U	2500 U	2.5 U	12 Ü	12 U	250 U	1000 U	1000 U	250 U	2.5 U
p-Isopropyltoluene	NA AMARA	50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 U
m.p-Xylenes		50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	SOUTH TO	2. 1. 0.5 U 5-2 U
sec-Butylbenzene OTES: U - not detected. I		50 U	500 U	0.5 U	2.5 U	2.5 U	50 U	200 U	200 U	50 U	0.5 U

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teri-Butylbenzene 250 U 2500 U 2.5 U 12 U 12 U 250 U 1000 U 1000 U 250 U 2.5 U 250 U 2.5 U 2.5 U 2.5 U 2.5 U 2.5 U 3.8 U	Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-1-122' L0105697 100 06/21/01 ug/L WATER	ECJ-1-148' L0105697 1000 06/21/01 ug/L WATER	ECJ-1-267' L0105697 5 06/21/01 ug/L WATER	ECJ-1-37 DUP L0105697 5 06/22/01 ug/L WATER	ECJ-1-37' L0105697 I 06/22/01 ug/L WATER	ECJ-1-62' L0105697 10 06/22/01 ug/L WATER	ECJ-1-72' L0105697 400 06/22/01 ug/L WATER	ECJ-2-117' L0105640 400 06/20/01 ug/L WATER	ECJ-2-152' L0105640 100 06/20/01 ug/L WATER	ECJ-2-187' L0105542 I 06/19/01 ug/L WATER
trans-1,3-Dichlomopropene 50 U 500 U 05 U 25 U 25 U 50 U 1200 75 U 1.5	***************************************	101011000000000000000000000000000000000			2.5 ป	12 U	12 U	250 U	1000 U			
Transi I 4 Dichlore 2 Sure 200 U 200 U 50 U 0.5 U	######################################		TO MAKE PLACED A SESPENDAR		0.75 U 0.5 U	3.8.U 2.5 U	3.8 U 2.5 U	83 50 U	300 U 200 U	1200 200 U		1.5

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	Sample ID SDG ID Dilution Factor Sample Date	ECJ-2-47' L0105640 40 06/20/01	ECJ-2-47' DUP L0105640 40 06/20/01	ECJ-2-82' L0105640 400 06/20/01	ECJ-3-126' L0105640 1 06/21/01	ECJ-3-51' L0105697 10 06/21/01	ECJ-3-91' L0105697 I 06/21/01	ECJ-4-130' L0107373 t 08/09/01	ECJ-4-160' L0107373 I 08/09/01	ECJ-4-225' L0107373 1 08/09/01	ECJ-4-245' L0107373 I 08/09/01
Compound	Units Matrix	ug/L WATER	ug/L WATER	ug/L WATER	ug/L WATER	ug/L WATER	ug/L WATER	ug/L	ug/L WATER	ug/L	ug/L
1,1,1,2-Tetrachloroethane		20 U	20 U	200 U	0.5 U			WATER		WATER	WATER
1,1,1-Trichloroethane		20 U	20 U	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 ป	0.5 U
1,1,2,2-Tetrachloroethane	NESSECTED PROGRAMMA, PROS	20 U	20 U	200 U	0.5 U	5 U	0.5 U .	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane		30 U	30 U	300 U	0.75 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	: 38431./4036.3943776./46	30 U	30 U	300 U	0.75 U	750	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene		20 U	20 Ú	200 U	0.75 U	7.5 U	0.75 U	0.75 U	0.75 ป	0.75 U	0.75 ป
1,1-Dichloropropene	nga ini ingkasyogos sass	100 U	100 U	1000 U	2.5 U	5 U	0.5 U	0.5 U	0.5 υ	0.5 U	0.5 U
1,2,3-Trichlorobenzene		100 U	100 U	1000 U	2.5 U	25 ปี 25 ปี	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,3-Trichloropropane	030000000000000000000000000000000000000	200 U	200 U	2000 U	5 U	ecusos to use an establishes.	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene		100 U	100 U	1000 U	2.5 U	50 U	5 U	S U	5 U	5 U	5 U
Benzene, 1,2,4-trimethyl	-6896.br868.dddd898999; p.;	100 U	100 U	1000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 ປ	2.5 U	2.5 U
Dibromochloropropane		100 U	100 U	1000 U	2.5 U	25 U 25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane (EDB)	Lidene, pedar reened serenes	100 U	100 U	1000 U	2.5 U	r saar risker sker rakeele kee	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichlorobenzene		100 U	100 U	1000 U	2.5 U	25 U	2.5 U .	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloroethane	.20010000001 TUCKER 10000000	20 U	20 U	200 ປ	0.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2 5 U
1,2-Dichloropropane	48440149946JJ3489503	70 U	70 U	200 U	0.5 U	5 U	. 0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene, 1,3,5-trimethyl-		100 U	100 U	1000 U	2.5 U	18 Ú	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U
1,3-Dichlorobenzene	389-15.000000000 ASTRON	100 U	100 U	1000 U		25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U *
1,3-Dichloropropane	Jane 1997 (1998)	100 U	100 U	1000 U	2.5 U	25 U	2.5 U	2.5.U	2.5 U	2.5 U	2.5 U
1,4-Dichlorobenzene		100 U	100 U	1000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,4-Dichlorobutane	er esse en les partes es	200 U	200 U	and the second control of the second control	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
2,2-Dichloropropane	35-978 388878486.2553-2-	100 U	200 U	2000 U 1000 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U
2-Butanone (MEK)	eli selen kalanda Paul Chip (ki	200 U	200 U	an an an an an an an an an an an an an a	2.5 U	25.U	2.5 U	23 U	2.5 U	2.5 U	2.5 υ
2-Hexanone	Geregorio eccessio de con	200 U	200 U	2000 U 2000 U	5 U	50 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	20 668 9388 1889 AB	200 U	200 U	6999134 1 00 K 2 0000134	5 U	50 U	5 U	5 U	5 U	5 U	S U
Acetone		200 U	200 U	2000 U 2000 U	5 U	. 50 U	5 U	5 U	5 U	5 U	5 U
Acrolein		500 U	500 U	2000 U	5 U	50 U	5 U :	5 U	3 U	3 U	5 U 🦠 🦠
Acrylonitrile		200 U	200 U		12 U	120 U	12 U	12 U	12 U	12 U	12 U
Benzene		200 U	200 U	2000 U	s u	50 U ,	5 U	S U	5 U	S U	5U
Bromobenzene	90000000000000000000000000000000000000	100 U	20 U	200 U 1000 U	0.5 U	5 U 1939, 319 - 2 Lyfzynyddoddioddiol	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane		100 U	68 1984 4 (1996) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	References (Sec. References)	2.5 Ü	25 U	2.5 ป	25 U	2.5 U	2.5 U	2.5 U
Bromodichloromethane	1888: 000001300-000-000	20 U	100 U 20 U	1000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromoform		20 U 20 U	999999 WY9884 WOODOOL 200005 SIAMS.	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	96,666,091,006,000	20 U 40 UJ	20 U	200 U .	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide		200 U	40 UJ 200 U	400 UJ	10	10 U	ΙÜ	ΙÜ	1.0	1 U	1 july 1 v 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NOTES		200 0	200 U	2000 U	5 U	50 U	5 U ·	S U	5 U	5 U	5 U

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	Sample Date	06/20/01	06/20/01	400 06/20/01	1	10	t	1	i	1	L
	Units	ug/L	ug/L		06/21/01	06/21/01	06/21/01	08/09/01	08/09/01	08/09/01	08/09/01
Compound	Matrix	WATER	WATER	ug/L WATER	ug/L WATER	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Carbon tetrachloride		20 U	20 U			WATER	WATER	WATER	WATER	WATER	WATER
Chlorobenzene		24	ANNOTATION THE PROPERTY OF THE PARTY OF THE	200 U	0.5 ป	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane		40 U	23 40 U	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	13	0.54
Chloroform		30 U	********	400 U	1 U	10 U	ΙÜ	ΙŪ	ΙÜ	١U	I U
Chloromethane		100 U	30 U	300 U	0.96	7.5 U	ı	0.75 U	0.75 U	0.75 U	0.75 U
Dibromochloromethane	di 5,0000 0,000 0000 0000 0000	AAAAAAAAAAA AAAAAA AAAAA	100 U	1000 ປັ	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Dibromomethane		20 U	20 Ü	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane	% 55 0550000000000000000000000000000000	200 U	200 U	2000 U	5 U	50 U	5 U	5 U	5 U	5 U	trough the state of the
Diethyl ether		200 U	200 U	2000 U	5 U	50 U	5 U	5 U	5 U		5 U
Ethyl methacrylate	190 w.00000000000000000000000000000000000	100 U	100 U	1000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	and the six finests, tongs at 5, a -	5 U
Ethylbenzene		200 U	200 ป	2000 U	5 U	50 U	5 U	5 U	2.50 Συ	2.5 U %3% % ~ 22.5 p. 100 (00000)	2.5 U
ACCOUNT TO A CONTRACT OF THE PROPERTY OF THE P	5 20000. 16: 60000000000noonnee	20 U	20 U	990	0.5 U	S U	0.5 U	0.5 U	er denne, han var hebbliografe from	5 Ü	5 U
Hexachlorobutadiene		100 N	100 U	1000 U	2.5 U	25 U	2.5 U	2.5 U	1. 8 30 <i>3678 31</i> 222 - 27233 - 2	1.6 -8.75-9411-1944-04.1343-24	2,1 (1301500 - 50-20-20
Methyl iodide	st annument akun mani in N	200 UJ	200 UJ	2000 UJ	5 U	50 U	5 U	2 J U	2.5 U	2.5 U	2.5 U
Isopropylbenzene		20 U	20 U	200 ป	0.5 U	3 U	0.5 U	0.5 U	SU	5 U	5 U
Methyl tert butyl ether		40 U	40 U	400 U	1 U	10 U	1 U	en e concernant de la companya de la companya de la companya de la companya de la companya de la companya de l	0.5 U	0.5 U	0.5 U
Methylene chloride		200 U	200 U	2000 U	S.U	50 U	5 U	1 U Constitutora a constitutora de la constitutora de la constitutora de la constitutora de la constitutora de la c	IU wantaka kumana menganyan s	10	1 U
Naphthalene		100 U	100 U	1000 U	2.5 U	25 U	2.5 Ù	5 U	5.U	5.U	5 U
Styrene		20 U	20 U	200 U	0.5 U	5 U 200		2.5 U	2.5 U	2.5 U	2.5 U
Tetrachloroethene		20 U	20 U	200 U	0.5 U	5 U	0.5 U	0.5 υ	1.6	0.5 U	0.5 U
Tetrahydrofuran		400 ป	400 U	4000 U	100	ANNALY CONTRACT OF STREET	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toluene	***********	30 U	30 U	1000	0.75 U	100 U	100	10 0	10 U	100	10 U
Trichloroethene		20 U	32	200 U	0.50	7.5 U	0.75 U	0.75 U	0.75 ป	0.82	0.75 U
Trichlorofluoromethane	an and an area managed defects	100 U	100 U	1000 U	received that the first in the debug place of the color	5 U,	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl acetate		200 U	200 U	2000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Vinyl chloride	441 10100 bril 2000 20000001,2000500	480	570	22000	5 U	50 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	94333328 43, 75386, 6587635	1700	1800	22000 200 U	1 U 2000-0000 (2000-000) (1000-000) (1000-000)	10 Ü	ΙÜ	ΙÜ	2.5	1.2	1.1
cis-1,3-Dichloropropylene		20 U	20 U	earline from a sippopalabrande	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.82	0.5 U
n-Butylbenzene	0497474888888888888888888888888888888888	20 U	20 U	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
n-Propylbenzene		20 U		200 U	0.5 U	5.U	0.5 U	0.5 U	0.5 U	0.5 U	
2-Chlorotohuene	\$0.485.681.7808.7888.0886.6866	100 U	20 U	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
D-Xylene			100 U	1000 U	2.5 U	25 U	25U	2.5 U	2.5 U	2.5 U	2.5 U
4-Chlorotoluene	\$55,686.co.666.co.co	20 U	20 U	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	
p-lsopropyltoluene		100 U	100 Ü	1000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U
n,p-Xylenes	9551555440.000ngc.0000.000	20 U	20 U	200 U	0.5 ป	5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
ni,p-Ayrenes sec-Butylbenzene		20 U	20 U	200 U	0.5 U	5 U	0.5 U	3662 0.5 U 50 50 50		0.5 U (1 in 1 in 1	0.5 U
OTES: U - not detected, J -		20 U	20-U	200 U	0.5 U	5 U	0.5 U	0,5 U	0.5 U	0.50	0.5 U

Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-2-47' L0105640 40 06/20/01 ug/L WATER	ECJ-2-47' DUP L0105640 40 06/20/01 ug/L WATER	ECJ-2-82' L0105640 400 06/20/01 ug/L WATER	ECJ-3-126' L0105640 I 06/21/01 ug/L WATER	ECJ-3-51' L0105697 10 06/21/01 ug/L WATER	ECJ-3-91' L0105697 I 06/21/01 ug/L WATER	ECJ-4-130' L0107373 1 08/09/01 ug/L WATER	ECJ-4-160' L0107373 i 08/09/01 ug/L WATER	ECJ-4-225' L0107373 l 08/09/01 ug/L WATER	ECJ-4-245' L0107373 i 08/09/01 ug/L WATER
tert-Butylbenzene trans-1,2-Dichloroethene	256 1000 5 4 50 400 000 000 000	100 U	100 U	1000 U	2.5 U	25 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
PAR PER PER PER PER PER PER PER PER PER PE		64	59	300 U	0.75 U	7.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
trans-1,3-Dichloropropene		20 U	. 20 U	200 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,4-Dichloro-2-butene		100 U	100 U	1000 U	2.5 U	25 U	2.5.U	2.5 U	2.3.Ü	2.5 U	230

NOTES:

U - not detected, J - estimated value, R - unusable, — - not analyzed.

Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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•	Sample ID SDG ID	ECJ-4-60° L0107373	ECJ-4-85' L0107373	EQUIPMENT B L0105697	LANK GCA-1 - L0105431	MW-10 L0105487	MW-10A L0105542	MW-10B L0105542	MW-12AR L0105431	MW-13 L0105487	MW-13A L0105542
	Dilution Factor	1	1	. 1	1	1	1 .	1 -	2	1	L0103342
	Sample Date	08/09/01	08/09/01	06/22/01	06/14/01	06/15/01	06/19/01	06/19/01	06/14/01	06/15/01	06/18/01
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
1,1,1,2-Tetrachloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U -			
1,1,1-Trichloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U 88,586 880	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U ~	0.5 U	iυ	0.5 U	0.5 U
1,1,2-Trichloroethane		0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	. IU Teenee eere vanteerende	0.5 U	0.5 U
1,1-Dichloroethane	er et ann er er er er er er er er er er er er er	0.75 ป	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	1.5 U	0.75 U	0.75 ป
1,1-Dichloroethene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.73 U	0.73 U	1.5 U	0.75 U	0.75 U
1,1-Dichloropropene	**************************************	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U	I U	0.5 U	0.5 U
1,2,3-Trichlorobenzene		2.5 U	2.5 U	2.5 U	2.5 U	2.5 Ü	2.5 U		5 U	2.5 U	2.5 U
1,2,3-Trichloropropane	anna hannann is i saaris sagges	5 U	5 U	5 U	5 U	5 U	23 U	2.5 U	5 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene		2.5 U	25 U	2.5 U	2.5 U	2.5 U	25.U	5 U	10 U	5 U	5 U
Benzene, 1,2,4-trimethyl	vv. v. saveni ponir poddynoodaboo	2.5 U	2.5 U	2.5 U	14	2.5 U	2.5 U	2.5 U	5 U	2 5 U	2.5 U
Dibromochloropropane		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	35 336+3330 172377 (Japan Hario	2.5 U	2.5 U
1,2-Dibromoethane (EDB)	on the second residence of the second second	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	anan aran ar unu yerda belebel	2.5 U	S U	2.5 U	2.5 U
1,2-Dichlorobenzene		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
1,2-Dichloroethane	**************************************	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
1,2-Dichloropropane		1.8 U	1.8 U	1.8 U	0.3 U	0.5 U	0.5 U	0.5 U	1 U	0.5 ป	0.5 U
Benzene, 1,3,5-trimethyl-	r-v-m bass bass band, bunnus pagua	2.5 U	2.5 U	2.5 U	2.5 U	inggreen water book a linear breeds	1.8 U	1. 8 U	3.5 U	1 8 U	18U
1,3-Dichlorobenzene	4248674307336-38-46-6	2.5 U	2.5 U	2.5 U	2.30	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
1,3-Dichloropropane	ur des un des comportes de la	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	S U	2.5 U	2.5 U
1,4-Dichlorobenzene		2.5 U	2.5 U	2.5 U	Acres and the control of the control of the	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
1,4-Dichlorobutane	**: 200000000000000000000000000000000000	5 U	5 U	2.3 U	Ü.	2.5 U	2.5 U	2.5 U	. 12	23 U	2.5 Ü
2,2-Dichloropropane		2.5.U	2.5 U	25U	5 U 1988-198 <u>4 - 2 - 2</u> 1987-2 - 2	S U	5 U 5.005.005.005.005.005.005.005	5 U	10 U	5 U	5 U
2-Butanone (MEK)	ensautaran, Jahrastara Ingga	5 U	5 U	an basar as an sa ri ing par 10 2000 sa 6	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
2-Hexanone	.2000.000.000.000.000.000	5 U	5 Ü	5 U	5 UJ	5 UJ	5 UJ	5 UJ	10 UJ	5 UJ	5 UJ
4-Methyl-2-pentanone (MIBK)		5 U	k in kalas ikala udas bududa uda uda daga bahir	5 U	5 UJ	5 UJ	5 UJ	5 ป)	10 UJ	5 UJ	
Acetone	::::::::::::::::::::::::::::::::::::::	13	5 U Bada dagan 2 (2) saasaa saasaa	5 U	5 U	5 U	5 U	5 U	10 U	5 U	5 U
Acrolein		12 U	5 U	5 U	5 UJ	5 UJ	5 UJ	5 UJ	10 UJ	5 UJ	5 UJ
Acrylonitrile	Careago consistente de la consistencia de la consis	12 U	12 U	12 U	12 U	12 U	12 U	12 U	25 U	12 U	12 U
Benzene		0.5 U	5 U	5 U	5 U	5 U	5 U		10 U 🗸 🐪	5 U	5 0 3 (5)
Bromobenzene	. 388-750-6000000000000000000		0.5 U	0.5 U	71	0.5 U	0.5 U	0.5 U	50	0.5 U	0.5 U
Bromochloromethane		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
Bromodichloromethane		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
Bromoform		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	i.u	0.5 U	0.5 U
Bromotorn Bromomethane	stoption occur nicopoppenene es	0.5 U	0.5 U	0.5 U -	0.5 U	0.5 U	0.5 U	0.5 U	I U	0.5 U	0.5 U
		10	ΙÜ	1 U	טו	1 U	טו	i w	2 U	SASTI UTS TO THE	a akada i ti da tara ini.
Carbon disulfide		5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	30.430.75 *** ** ** **. 5 U	5 U

NOTES:

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	Sample ID	ECJ-4-60'	ECJ-4-85'	EQUIPMENT B	LANK GCA-I	MW-10	MW-10A	MW-10B	MW-12AR	MW-13	MW-13A
	SDG ID	L0107373	L0107373	L0105697	L0105431	L0105487	L0105542	L0105542	L0105431	L0105487	L0105542
	Dilution Factor	1	1	ì	1	1	. 1	1	2	1	1
	Sample Date	08/09/01	08/09/01	06/22/01	06/14/01	06/15/01	06/19/01	06/19/01	06/14/01	06/15/01	06/18/01
~ .	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Carbon tetrachloride		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	I U	0.5 U	0.5 U
Chlorobenzene		0.5 U	0.5 U	0.5 U	54	0.5 U	0.63	0.7	50	0.5 U 0.5	0.59
Chloroethane		וט	וטו	1 U	1 U	ΙÜ	ΙU	ΙÜ	2 U	1 U	0.39 I U
Chloroform		0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	1.5 U	0.75 U	
Chloromethane		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	s U	2.5 U	0.75 U
Dibromochloromethane		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	10	0.5 U	2.5 U
Dibromomethane		5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	dentago er nya ningingi en hebri disibilipi h	0.5 U
Dichlorodifluoromethane		5 U	5 U	5.U	5 U	5 U	5 U	5 Ü	100	5 ปี 5 ปี	5 U 16 (1664-1016 <u>211.0</u> 446), No.
Diethyl ether		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	10 U	- A 55 A55 CO. 1 - F. A55 COSTO, D. G.	s U
Ethyl methacrylate		5 U	5 U	5 U	5 U	5 U	2.3 U	2:3 U	10 U	2.5 U 5:U	2.5 U
Ethylbenzene		0.5 U	0.5 U	0.5 U	2.2	0.5 U	0.5 U	0.5 U	skuukaa liiva han illaanni laanana saa Linyain.	The State of the S	5 U
Hexachlorobutadiene		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.1	0.5 U	0.5 U Guidat watan ke unimendakan
Methyl iodide		5 U	5 U	5 U	5 U	5 U	5 VJ	annanana ir nam or on unio, perpayegg	5 U	2.5 U	2.5 U
Isopropylbenzene		0.5 U	0.5 U	0.5 U	15	0.5 U	0.5 U	5 UJ	10 U	5 UJ Sessonara et aktorom give v	SUJ
Methyl tert butyl ether	designations and a second second	1 U	ΙŪ	ΙÜ	וט	10	0.5 U	0.5 U	12	0.5 U	0.5 U
Methylene chloride		5 Ü	5 U	5 U	5 U	5 U	1 U 5 U	1 U Secretario 200 de acomo a	2 U	1 Simo som manning service	1.3
Naphthalene	Terroscottean popular	2.5 U	2.5 U	2.5 U	13	2.5 U	\$50,550,0000,000,0000,0000000,0050	5 U	10 U	5 U	5 U
Styrene		0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	2.5 U	2.5 U	40	2.5 U	2.5 U
Tetrachloroethene	00007-0000000000000000000-0000	0.5 U	0.5 U	0.5 U	0.5 U	4799 Seculos Control Georges	0.5 U	0.5 U	ΙU	0.5 U	0.5 U
Tetrahydrofuran		10 U	10 U	10 0	0.5 U 10.U	0.5 U	0.5 U	0.5 U	1 U	0,5 U	0.5 U
Toluene	4 15-4 1664-60000000000000000000000000000000000	0.75 U	0.75 U	0.75 U	10.U 1.2	10 U	14	10 U	20 U	100	10 U
Trichloroethene		0.5 U	0.73 U	0.75 U		0.75 U	1.8 3000000000000000000000000000000000000	0.75 U	1,5 U	0.75 U	0.75 ป
Trichlorofluoromethane	- 555555755,4975,45456,4555555444	2.5 U	2.5 U	0.5 U	0.5 U	8 9	0.5 U	8.6	ıņ	0.5 Ü	0.5 U
Vinyl acetate	1900/2008/05/2008/05/2008/2008	5 U	2.3 U 5 U	arekeriare kikerik kansasi	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
Vinyl chloride		1 U	3 U 1 U	5 U	5 UJ	5 UJ	5 UJ	5 U	10 W	5 UJ	5 UJ
cis-1,2-Dichloroethene		05 ป	0.5 U	1 U	11 1676-6 - 217160-6766 666	IU Marka ka ang marka na na asasasa	10	2.5	2 U	ΙU	1.4
cis-1,3-Dichloropropylene		0.5 ปั	en best auffrit vest ob havet bilde bilde begrif	0.S.U	23	18	1.5	22	1 U	1.1	0.8
n-Butylbenzene	So. (18.7000) Seephoodescoppi;;;	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	ıv	0.5 U	0.5 U
n-Propylbenzene		r projim sa anganakang propinsi	0.5 U	0.5 U	1.4	0.5 U	0.5 U	0.5 U	2.5	0.5 U	0.5 U a 🕆
2-Chloratoluene	Antikkasisisisisisisisisisisisisisisisisi	0.5 U	0.5 U	0.5 U	3.2	0.5 U	0.5 U	0.5 U	4.5	0.5 U	0.5 U
o-Xylene		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	25 U	5 U	2.5 U	2.5.0
4-Chlorotoluene	2012 10 10 10 10 10 10 10 10 10 10 10 10 10	0.5 U	0.5 U	0.5 U	1.9	0.5 U	0.5 U	0.5 U	2.5	0.5 U	0.5 U
120°×490° 1200405. NEOLAVOLLOGOGGGGGGGGGGGGGGGGGGGGGG		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	SU SU	2.5 U	2.5 U
p-Isopropyltoluene	NAMANAANSA SEE JAMBAANAANSA JAMBAANAAN	0.5 บ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	I U	0.5 U	0.5 U
m.p-Xylenes		0.5 U	0.5 U	0.5 U	3,7	0.5 U	0.5 U	0.5 U	5.2	0.5 U. 37	0.5 U
sec-Butylbenzene NOTES: U - not detected, J		0.5 U	0.5 ป	0.5 U	1	0.5 U	0,5 U	0.5 U	704. (d. 147. (d. 141.) (d. 141.) 1.5	0.5 U	0.5 U

U - not detected, J - estimated value, R - unusable, --- not analyzed.

Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-4-60' L0107373 I 08/09/01 ug/L WATER	ECJ-4-85' L0107373 I 08/09/01 ug/L WATER	EQUIPMENT E L0105697 I 06/22/01 ug/L WATER	LANK GCA-1 L0105431 1 06/14/01 ug/L WATER	MW-10 L0105487 I 06/15/01 ug/L WATER	MW-10A L0105542 ! 06/19/01 ug/L WATER	MW-10B L0105542 1 06/19/01 ug/L WATER	MW-12AR L0105431 2 06/14/01 ug/L WATER	MW-13 L0105487 I 06/15/01 ug/L WATER	MW-13A L0105542 I 06/18/01 ug/L WATER
tert-Butylbenzene	50000000000000000000000000000000000000	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2.5 U
trans-1,2-Dichloroethene		0.75 U	0.75 U	0.75 U	0.75 U	0.75	0.75 U	0.75 U	1.5 U	0.75 U	0.75 U
trans-1,3-Dichloropropene trans-1,4-Dichloro-2-butene		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	ΙÜ	0,5 U	0.5 U
		2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2:5 U	2.5.U	5 U	2.5 U	2.5 Ü

NOTES:

U - not detected, J - estimated value, R - unusable, — - not analyzed.

Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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	Sample ID SDG ID	MW-14 L0105431	MW-15 L0105431	MW-16 L0105431	MW-17 L0105542	MW-2 L0105431	MW-22A L0105542	MW-24	MW-4 L0105542	MW-4A	MW-5
	Dilution Factor	20	2	1	1	20	£0105542 \$	L0105431 100	10	L0105542	L0105487
	Sample Date	06/14/01	06/13/01	06/13/01	06/18/01	06/14/01	06/18/01	06/13/01	06/18/01	06/18/01	1
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L		06/15/01
Compound .	Matrix .	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	ug/L WATER	ug/L WATER
1,1,1,2-Tetrachloroethane		10 U	1 U	0.5 U	0.5 U	10 U	2.5 U	50 U			
1,1,1-Trichloroethane		10 U	I U	0.5 U	0.5 U	100	2.5 U	50 U	5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane		10 U	I U	,0.5 U	0.5 U	10 U	2.5 U	50 U	2 4 2004 200 40 54 6654 606666	0.5 U	0.5 U
1,1,2-Trichloroethane		15 U	1.5 U	0.75 U	0,75 U	15.U	2.5 U	75 U	5 U	0.5 U	0.5 U
1,1-Dichloroethane	h - Ar Anne i i i i i i i i i i i i i i i i i i	15 U	1.5 U	0.75 U	0.75 U	15 U	3.8 U	eur en en en eur eur en la republie de feret.	7.5 U	0.75 U	0.75 ป
1,1-Dichloroethene		10 U	1.0	0.5 U	0.5 U	100	2:5 U	75 U	. 7.5 U	0.75 U	0.75 U
1,1-Dichloropropene	e i de escribio de la responsibilità di applicati	50 U	5 U	2.5 U	2.5 U	50 U	ernege vernostyr i viversyngssesjour	50 U	5 Ü	0.S U	0.5 U
1,2,3-Trichlombenzene	ABABAR BABARA	50 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
1,2,3-Trichloropropane	runs mass seen party. Ten kane leng	100 U	10 U	5 U	5 U	100 U	12 U	250 U	25 U	2.5 U	2.5 U
1,2,4-Trichlorobenzene		50 U	5 U	2.5 U	2.5 U		25 U	500 U	50 U	. 5 U	5 U
Benzene, 1,2,4-trimethyl		50 U	6.6	2.5 U	4.10.00010.004 541.000111.1461.046	50 U	12 U	250 U	25 U	2.5 U	2.5 U
Dibromochloropropane		50 U	5 Ú	2.5 U	2,5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
1,2-Dibromoethane (EDB)		50 U	5 U	paga magapaganan ari matikada da ba	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
1,2-Dichlorobenzene	5585888 PARK BAR DARO B	50 U		2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
1,2-Dichloroethane		10 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
1,2-Dichloropropane	\$350.20000.0000.40740400.co	35 U	1 U 5.000.000.002 to 2100.0000.000	0.5 U	0.5 U	10 U	2.5 U	50 U	5 U	0.5 U	0.5 U
Benzene, 1,3,5-trimethyl-		50 U	3,5 U	1.8 U	1.8 U	35 U	8.8 U	180 U	18 U	1.8 U	1.8 U
1,3-Dichlorobenzene	: 20/06/40/50/50/50/50/50/50/50/50/50/50/50/50/50		5 U	2.5 U	2.5 U	50 U	19	250 U	25 U	2.5 U	2.5 U
1,3-Dichloropropane		50 U	5 U 🛴	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
1,4-Dichlorobenzene	Nandar Despritation on assert	50 U	5 U 865 - 120, 601 120 - 20 - 20 - 20	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2,5 U
ava ku iliyaan ili ili kiri kiri ka ka ka ka ka saabaa ah saabaa ah saabaa ah saabaa ah saabaa ah saabaa ah sa		50 U	5 U	2.5 U	2.5 U	SO U	12 U	250 U	25 U	2.5 U	2.5 U
1,4-Dichlorobutane	d 200 debug atau aran saran sa saran sa	100 U	10 U	5 U	5 U	100 U	25 U	500 U	50 U	5 U	5 U
2,2-Dichloropropane		50 U	5 U	2.5 U	2.5 U	50 U	I2 U	250 U	25 U	2.5 U	
2-Butanone (MEK)	Made and the second of the second	100 UJ	10 UJ	5 UJ	5 UJ	100 UJ	25 UJ	500 UJ	50 UJ	5 UJ	2.3 U
2-Hexanone		100 UJ	10 W	5 UJ	5 UJ	100 UJ	25 UJ	500 UJ	50 UJ		50. 50.50
4-Methyl-2-pentanone (MIBK)		100 U	10 U	5 U	5 U	100 U	25 U	500 U	50 U	5 U	经收货 经收益 化乙基磺胺 化多氯化
Acetone		100 UJ	10 UJ	S UJ	5 UJ	100 UJ	25 UJ	500 UJ	::::::::::::::::::::::::::::::::::::::		5 U
Acrolein		250 U	25 U	12 U	12 U	250 U	62 U	1200 U	120 U	 Managed Model of the end of the first 	្រីនួល
Acrylonitrile		100 U	10 U	5 U	5 U	100 U	25 U	500 U	50 U	I2 U	12 U
Benzene		880	87	0.5 U	0.65	680	26	2400	r vitabili viganomi, e e	5 U	Section 1
Bromobenzene		50 U	5 U	2.5 U	2.5 ∪	SO U	20 12 U	2400 250 U	9,4 C - 30 - 30 - 11 - 11 - 11 - 11 - 11 - 11	0.5 U	0.5 U
Bromochloromethane	revolute service paradores (documentes de la constitución de la consti	50 U	5 U	2.5 U	2.5 U	50 U	12 U	[일하다 역사 harr - 18 18 1922 - 198] La	25 ∪	2.5 U	2.5 U
Bromodichloromethane		10 U	ıυ	0.5 U	0.5 U	10 U	12 U 2.5 U	250 U	25 U	2.5 U	2.5 U
Bromoform	, managa parabat terutatakan	10 U	ΙÜ	0.5 U	0.5 U	10 U	asse (pelling), pre, (be) his his	50 U	5 U	0.5 U	0.5 U
Bromomethane		20 U	20	0.5 U	10	20 U	2.5 U	50 U	5 U	0.5 U	0.5 U
Carbon disulfide		100 U	10 U	5 U	asaata ahii katabii ku ahiiningi		5 U	100 U	100	1.0	. 31 U
NOTES: Us not detected Is			100	30	5 U	100 U	25 U	500 U	50 U	5 U	5 U

NOTES:

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	Sample ID SDG ID Dilution Factor Sample Date	MW-14 L0105431 20 06/14/01	MW-15 L0105431 2 06/13/01	MW-16 L0105431 1 06/13/01	MW-17 L0105542 I 06/18/01	MW-2 L0105431 20 06/14/01	MW-22A L0105542 5 06/18/01	MW-24 L0105431 100	MW-4 L0105542 10 06/18/01	MW-4A L0105542 I	MW-5 L0105487
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	06/13/01	ug/L	06/18/01	06/15/01
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	ug/L WATER	WATER	ug/L WATER	ug/L WATER
Carbon tetrachloride		10 U	ΙÜ	0.5 U	0.5 U	10 U	2.5 U	50 U	5 U	0,5 U	0.5 U
Chlorobenzene		70	3	0.5 U	0.5 U	78	5.1	130	s u	0.5 U	0.5 U
Chloroethane		20 U	2 U	ΙÜ	1 U	20 U	5 U	100 U	10 U	ΙU	1 U
Chloroform		15 U	1.5 U	0.75 U	0.75 U	15 U	3,8 U	75 U	7.5 U	0.75 U	0.75.U
Chloromethane		50 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
Dibromochloromethane		10 U	10	0.5 U	0.5 U	10 U	2.5 U	50 U	s Ü	0.5 U	0.5 U
Dibromomethane		100 U	10 U	5 U	5 U	100 U	25 U	500 U	50 U	5 U	5 U
Dichlorodifluoromethane		100 U	10 U	5 U	5 U	100 U	25 U	500 U	50 U	5 U	5 U
Diethyl ether		50 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	CARDER LITTER HALL NUMBER CREATING
Ethyl methacrylate		100 U	10 U	5 U	5 U	100 U	25 U	500 U	50 U	2.3 υ 3.0 3.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2.5 U 5 U
Ethylbenzene		10 U	2.5	0.5 U	0.5 U	10 U	2.9	50 U	5 U	0.5 U	0.5 U
Hexachlorobutadiene		50 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	the term of the same and the
Methyl iodide		100 U	IO U	5 U	5 UJ	100 ປັ	25 UJ	500 U	50 UJ	2.3 U 5 UJ	2.5 U
Isopropyibenzene		10 U	1,6	0.5 U	0.5 U	10 U	2.5 U	50 U	30 G	05 U	5 U a ana amin'ny 1,2 ao amin'ny 1
Methyl tert butyl ether		·20 U	2 U	١U	1 U	20 U	5 U	100 U	10 U	era na na karantan kurun ang karanga	0.5 U
Methylene chloride		100 U	10 U	S U	5 U	100 U	25 U	500 U	50 U	1 U 5:U	3.6 (a. 66 M. 1. 2.1 (Not to Mark)
Naphthalene	***************************************	50 U	6.9	2.5 U	2,5 U	50 U	12 U	250 U	25 U	and a resilt of the first in the first of th	5 U
Styrene		10 U	l U	0.5 ∪	0.5 U	iou	2.5 U	50 U	25 U	2.5 U : Maka, U X - 3 - 3 - 3 - 3 - 3 - 3	2.5 U
Tetrachloroethene	enne e e sassaggeraggeragger	10 U	1 U	0.5 U	0.5 U	10 U	2.5 U	50 U	NON ROOM INDICATOR SAME SEEDS	0.5 U	0.5 U
Tetrahydrofuran		200 U	20 U	10 U	100	200 U	50 U	1000 U	5 U	0.5 U - V. v (Sect	0.5 U
Toluene	NAME NA LIGHT N. LIGHT CONTROL CONTROL CONTROL	15 U	1.5 U	0.75 U	0.75 U	15 U	7.3	75 U	100 U	100	10 U
Trichloroethene		10 U	1.0	0.5 U	9.7	37	2.5.U	A. A.S. SAR	7.5 U	0,75 U	0.75 U
Trichlorofluoromethane	500 - 5 ¹ 1 1 200 400 51 50 50 50 50 50 50 50 50 50 50 50 50 50	50 U	5 U	2.5 U	2.5 U	50 U	12 U	710	700	0.5 U	0.5 U
Vinyl acetate		100 UJ	10 UJ	5 UJ	5 UJ	100 (1)	25 UJ	250 U 500 UJ	25 U	2.5 U	2.5 U
Vinyl chloride	onn balawana ya Palipaga ya Bababa	20 U	2 U	1 U	1 U	20 U	25 U/	Maradidd Garlelan arle - 1 i eilidd 6c 1911 Gue	50 UJ	5 UJ	S UT
cis-1,2-Dichloroethene		10 U	I U	0.5 U	99			100 U	24 10000 - Nort L. 21, 2001 John Service	1 U	I Ü
cis-1,3-Dichloropropylene	io ingressingsettetti sprestr	10 U	ΙÜ	0.5 U	0.5 U	11 0 10 U	2.5·U	240	370	0 S U	0.5 U
n-Butylbenzene	2000-000-000-000-000-000-000-000-000-00	10 U	. บั	0.5 U	0.5 U	10 U	2.5 U 2.5 U	. 50 U	5 U	0,5 U	0.5 U
n-Propylbenzene		10 U	1.4	0.5 U	0.5 U	10 U	2.5 U	50 U	5 U	0.5 U	0.5 U
2-Chloratoluene		50.U	5 U	2.5 U	2.5 U	50 U		50 U	5 U monte con 1 decembro e con	0.5 U	0.5 U
o-Xylene	ause, 1999/1999/1999	10 U	3.9	0.5 U	0.5 U	10 U	12 U	250 U	25 U	250	2.5 U
4-Chlorotoluene		50 U	5 U	2.5 U	0.5 U 2.5 U	50 U	4.5	50 U	5 U Defenda a Labardo esceler	0.5 U	0.5 U
p-Isopropyltoluene		10 U	1 U	0.5 U	2.5 U	- 999 990000 November 1, \$40,040,000,000,000	12 U	250 U	25 U	2 5 U	2.5 U
m,p-Xylenes		24	13	0.5 U	0.5 U	10 U	3.3	50 U	5 U	0.5 U	0.5 U
sec-Butylbenzene		10 U	טו טו	0.5 U	0.5 U	10 U	28 2.5 U	50 U	5 U	0.5 U	0.5 U

NOTES:

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	Sample ID	MW-14	MW-15	MW-16	MW-17	101/2	1011 00 1		1011		
	•					MW-2	MW-22A	MW-24	MW-4	MW-4A	MW-5
	SDG ID	L0105431	L0105431	L0105431	L0105542	L0105431	L0105542	L0105431	L0105542	L0105542	L0105487
• •	Dilution Factor	20	2	1	1	20	5	100	10	1 .	1
	Sample Date	06/14/01	06/13/01	06/13/01	06/18/01	06/14/01	06/18/01	06/13/01	06/18/01	06/18/01	06/15/01
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
Compound	Matrix	WATER	•	-	•	_	-	_	-	-	ug/L
Compound	Mauix	WAICK	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
tert-Butylbenzene		50 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U	2.5 U	2.5 U
trans-1.2-Dichloroethene		15 U	1.5 U	0.75 U	0.75 U	15 Ü			CONTRACTOR CONTRACTOR		probability of the second of the second
finandanaudusata I.a. dus procudu Jacqueside (6) (6) (6) (6)		Print restar distribution	989888888888	404004004000000000000000000000000000000	0./3 U	U </th <th>3.8 U</th> <th>75 U</th> <th>9.8</th> <th>0.75 U</th> <th>0.75 U</th>	3.8 U	75 U	9.8	0.75 U	0.75 U
trans-1,3-Dichloropropene		10 U	10	0.5 U	0.5 U	10 U	2.5 U	50 U	5 U	0.5 U	0.5 U
trans-1,4-Dichloro-2-butene		50 U	5 U	2.5 U	2.5 U	50 U	12 U	250 U	25 U		
AND THE PROPERTY OF THE TWO WAS DISCUSSIBLED SECTIONS OF THE		Kist adresnostilistiksi siiti	r en receptables efteknisk betrek i ete					2300	U 62	2.5 U	2.5 U

NOTES:

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Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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	Sample ID SDG ID Dilution Factor	MW-5A L0105487 I	MW-6 L0105542 40	MW-6 DUP L0105542 I	MW-6A L0105542 2	MW-6A DUP . L0105542 2	MW-8 L0107373	MW-8 DUP L0107373 1	MW-8A L0107373	TRIP BLANK L0105431	TRIP BLANK L0107373
	Sample Date	06/15/01	06/19/01	06/19/01	06/19/01	06/19/01	08/09/01	08/09/01	08/09/01	03/14/01	08/06/01
Comment	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
1,1,1,2-Tetrachloroethane	686 Met Mener annangere verse	0.5 U	20 U	20 U	1 U	1 U	0.5 U	0.5 U	.0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane		0.5 U	20 U	20 U	1 U	ΙU	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	ESSE A AND DESCRIPTION OF THE	0.5 U	20 U	20 U	10	١U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane		0.75 U	30 U	30 U	15.0	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U :::
1,1-Dichloroethane	199700000000000000000000000000000000000	0.75 U	30 U	30 U	1.5 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1-Dichloroethene		0.5 บ	20 U	20 U	ιÜ	I U	0,5 U	0.5 U	0.5 U	0.5 U	0.75 U
1,1-Dichloropropene	rakan akkan mana ya ya ya sa sa sa sa sa sa sa sa sa sa sa sa sa	2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2,3-Trichlorobenzene		2 S U	100 Ü	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	250	2.5.U
1,2,3-Trichloropropane	·	5 U	200 U	200 U	10 U	10 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene		2.5 U	100 U	10 0 ∙U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Benzene, 1,2,4-trimethyl	SSAS, SESSASSAS A NASANANA JAMA JA	2.5 U	100 U	100 U	5 U	S U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Dibromochloropropane		2.5 U	100 U	100 U	SU	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dibromoethane (EDB)	y ta ann ann an an an an an an an an an an	2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	 A Prior Alexander du Augustin, 1
1,2-Dichlorobenzene		2,5 U	100 U	100 U	5 U	5 Ú	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,2-Dichloroethane		0.5 U	20 U	20 U	1 U	۱U	0.5 U	0.5 U	0.5 U	2.3 U 0.5 U	2.5 U
1,2-Dichloropropane		1.8 U	70 U	70 U	3.5 U	3,5 U	1.8 U	1.8 U	1.8 U	1.8.0	0.5 U
Benzene, 1,3,5-trimethyl-		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	1.8 U
1,3-Dichlorobenzene		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,3-Dichloropropane		2.5 U	100 U	100 U	5.U	5 U	2.5 U	2.5 U	2.5 U	vensuotenty is it in it illustration s	2.5 U
1,4-Dichlorobenzene		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
1,4-Dichlorobutane		5 U	200 U	200 U	10 U	10 U	5 U	2.9 U	23 U	2.5 U	2.5 U
2,2-Dichloropropane		2.5 U	100 U	100 U	5 Ú	5 U	2.5 U	2.5 0	Maria Maria Santa Araba and Araba an	5 U 1 3 3 3 3 2 2 2 2 3 3 3 1 1 2 2 2	5 U
2-Butanone (MEK)		5 UJ	200 UJ	200 UJ	10 U	10 U	5 U	2.3 U	2.5 U 5 UJ	2.5 U	2.5 U
2-Hexanone		S UJ	200 UJ	200 UJ	10 U	10 0	ัร์บั	5 U 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		SU Nitrode Section production	5 U
4-Methyl-2-pentanone (MIBK)		5 U	200 U	200 U	10 U	10 U	5 U	5 U	5 UJ	5 U	្តប
Acetone		5 UJ	200 UJ	200 UJ	10 U		5 U 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		5 UJ -0 -0 00-2 2020 (000-11-000	5 U	\$ U
Acrolein		12 U	500 U	500 U	25 U	25 U	valas palvarāmurija virtiesem 1111 vei	5 U	5 UJ	5 U	5 U
Acrylonitrile		5 U	200 U	200 U	10 U	23 U	12 U 5 U	12 U	12 U	12 U	12 U
Benzene		0.5 U	20 U	20 U	9.3	9.8	make a nor horgergons, es-	5 U	5 U	3 U ()	i e e 5 U (≥ 0 i)
Bromobenzene		2.5 U	100 U	100 U	5.U	9.8 5 Ü	0.5 U 2.5 U	0.5 U	0.5 U Protesta a seu a crana con	0.5 U	0.5 U
Bromochloromethane	randras en el como de la coma de la composició de la comp	2.5 U	100 U	100 U	5 U	5 U	- 17 (1988)	2.5 U	2.5 ∪	2.5 U	2.5 U
Bromodichloromethane		0.5 U	20 U	20 U	10	Service and the service of the servi	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Bromoform	as vacinos de el monos de la calcidad de la calcida	0.5 Ų	20 U	20 U	an ana ao missa. Ing as si	10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane		IU	40 U	40 U	1 U 2 UJ	1 U	0.5 U	0.5 U .	0.5 U	0.5 U	0.5 U
Carbon disulfide		5 U	200 U	200 U	2 UJ 10 U	2 UJ 10 U	1 U 5 U	1 Ú	וט	10	%់ដ្ឋប្រជាជាជាក្រុ

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	Sample ID SDG ID Dilution Factor	MW-5A L0105487 I	MW-6 L0105542 40	MW-6 DUP L0105542	MW-6A L0105542 2	MW-6A DUP L0105542 2	MW-8 L0107373	MW-8 DUP L0107373	MW-8A L0107373	TRIP BLANK L0105431	TRIP BLANK L0107373
	Sample Date	06/15/01	06/19/01	06/19/01	06/19/01	06/19/01	08/09/01	08/09/01	08/09/01	1 03/14/01	1
	Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	08/06/01
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	ug/L WATER
Carbon tetrachloride		0.5 U	20 U	20 U	1 U	1 Ü	0.5 U	0.5 U	0.5 U		
Chlorobenzene		0.5 U	29	26	18	18	0.5 U	0.5 U	0.5 U	0.5 U 0.5 U	0.5 U
Chloroethane		ΙU	40 U	40 U	2 U	2 U	ΙÜ	ΙŲ	. I U	03 U	0.5 U
Chloroform		0.75 U	30 Ü	30 U	1.5 U	1.5 U	0,75 U	0.75 U	0.75 U	0.75 U	I U
Chloromethane		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	0.73 U 2.5 U	2.5 U	0.75 U
Dibromochloromethane		0.5 U	20 U	20 U	ιυ	ΙÜ	0.5·U	0.5 U	0.5.0	0.5 Ü	2.5 U 0.5 U
Dibromomethane	200000000000000000000000000000000000000	5 U	200 U	200 U	10 U	10 U	S U	S U	5 U	5 U	rana sa nusiya wala elebihi
Dichlorodifluoromethane		5 U	200 U	200 U	10 U	. 10 U	5 U	3 Ü	5 UJ	5 U	5 U 5 U
Diethyl ether		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Ethyl methacrylate		5 U	200 U	200 U	10 U	10 U	5 U	5 U	5 U	2.5 U	2.5 U
Ethylbenzene	elitatista litarahannananan sanyus suurus s	0.5 U	20 U	20 U	ΙÜ	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Hexachlorobutadiene		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	
Methyl iodide	SWASSASSA PROGRAM FOR SANCE OF	5 U	200 UJ	200 UJ	10 UJ	10 UJ	5 U	°	5 UJ	2.3 U	2.5 U
Isopropylbenzene		0.5 U	20 U	20 U	10	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert butyl ether		2	40 U	40 U	2 U	2 U	1 U	lυ	ΙU	1 U	1 U
Methylene chloride		5 U	200 U	200 U	10 U	10 U	S U	5 U	 	50	5 U S
Naphthalene		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Styrene		0.5 U	20 U	20 U	I Ü	ΙÜ	0.5 บ	0.5 U	0.5 U	0.5U	2.5 U
Tetrachloroethene	V0000000000000000000000000000000000000	0.5 U	20 U	20 U	1 U	ΙÜ	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrahydrofuran		10 U	400 U	400 U	20 U	20 U	10 U	10 U	10.0	S 10 U	0.5 U
Toluene	A CASTRAL PROFESSION	0.75 U	30 U	30 U	1.5 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Trichloroethene		0.5 U	120	120	IU	יטו	0,5 U	0.5 U	0.5 U	0.73 0	
Trichlorofluoromethane		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.5 U 2.5 U
Vinyl acetate		5 UJ	200 UJ	200 UJ	10 U	10 U	5 U	5 U	5 U		2.5 U
Vinyl chloride		เย	890	890	55	59	1 U	ΙU	TU TERRET	1 U	State and the state of
cis-1,2-Dichloroethene		0.5 U	2800	2900	72	75	0.5 Ú	0.5 U		0.5 Ü	1 U **: 03 U***
cis-1,3-Dichloropropylene		0.5 U	20 U	20 U	ΙU	1 U	0.5 U	0.5 U	0.5 U	0.5 U	The second secon
n-Butylbenzene		0.5 U	20 U	20 U	1.0	1.0	0.5 U	0.5 U	0.5 U	0.5 U 200	0.5 U 0.5 U
n-Propylbenzene	va anamana araba araba a	0.5 U	20 U	20 U	ΙU	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Chlorotoluene		2.5 U	100 U	100 U	5.U	5 Ü	2.5 U	2.5 U	2.5 U	2.5 U	
o-Xylene		0.5 U	20 U	20 U	1 U	I U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
4-Chlorotoluene		.2.5 U	100 U	100 U	S U	5 U	2.5 U	2.5 U	2.5.U	2.5 U	0.5 U
p-Isopropyltoluene	** *********	0.5 U	20 U	20 U	1 U	IU	0.5 U	0.5 U	0.5 U	2.5 U	2.5 U
m,p-Xylenes		05 U	20 Ü	20 U	ΙU	i U	0.5 U	0.5 Ŭ	0.3 U		0.5 U
sec-Butylbenzene		0.5 U	20 U	20 U	I U	I U	0.5 U	0.5 U	0.5 U	0.5 U 0.5 U	0.5 U

NOTES:

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Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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DBF File: N:\5509\28602\TEMPDATA.DBF
FXP File: N:\5509\28602\TABLEPR.FXP



Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	MW-5A L0105487 I 06/15/01 ug/L WATER	MW-6 L0105542 40 06/19/01 ug/L WATER	MW-6 DUP L0105542 1 06/19/01 ug/L WATER	MW-6A L0105542 2 06/19/01 ug/L WATER	MW-6A DUP L0105542 2 06/19/01 ug/L WATER	MW-8 L0107373 1 08/09/01 ug/L WATER	MW-8 DUP L0107373 i 08/09/01 ug/L WATER	MW-8A L0107373 1 08/09/01 ug/L WATER	TRIP BLANK L0105431 I 03/14/01 ug/L WATER	TRIP BLANK L0107373 I 08/06/01 ug/L WATER
tert-Butylbenzene		2.5 U	100 U	100 U	5 U	5 U	2.5 U	2.5 U	2.5 U	2.5 U	2,5 U
trans-1,2-Dichloroethene		0.75 U	100	62	3.7	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	
trans-1,3-Dichloropropene		0.5 U	20 U	20 U	1 U	1 U	0.5 U	0.5 U	0.5 U	4394,730°4,73°7,6374°44.4	0.75 U
trans-1,4-Dichloro-2-butene		2.5 U	100 U	100 U	5.U	5 Ü	2:5 U	2.5 U	2.5 U	0.5 U 2.5.U	0.5 U 2.5 U

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DBF File: N:\5509\28602\TEMPDATA.DBF
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Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-1-122' L0105697 I 06/21/01 ug/L WATER	ECJ-1-148' L0105697 1' 06/21/01 ug/L WATER	ECJ-1-267' L0105697 I 06/21/01 ug/L WATER	ECJ-1-37 DUP L0105697 I 06/22/01 ug/L WATER	ECJ-1-37' L0105697 I 06/22/01 ug/L WATER	ECJ-1-62' L0105697 ! 06/22/01 ug/L WATER	ECJ-1-72' L0105697 I 06/22/01 ug/L WATER	ECJ-2-117' L0105640 1 06/20/01 ug/L WATER	ECJ-2-152' L0105640 l 06/20/01 ug/L WATER	ECJ-2-47' L0105640 I 06/20/01 ug/L WATER
Aroclor 1221	0000 10000 0	0.489 U	0.459 U	0.459 U	0.45 U	0.5 U	0.464 U	0.479 U	0.412 U	0.4 U	0.444 U
Aroclor 1232		0.489 U	0.459 U	0.459 U	0.45 U	0.5 U	0.464 U	0.479 U	0.412 U	0.4 U	0.444 U
Aroclor 1242/1016		1.56	0.459 U	0.459 U	0.45 U	0.5 U	0.464 U	0.479 U	0.412 U	0.4 U	0.444 U
Aroclor 1248		0.489 U	0.459 U	0.459 U	0.45 U	0.5 U	0.464 U	0.479 U	0.412 U	0.4 U	0.444 U
Aroclor 1254		0.489 U	0.459 U	0.459 U	2.08 J	1.67 J	0.464 U	0.479 U	0.412 U	0.4 U	0,444 U
Aroclor 1260		0.489 U	0.459 U	0,459 U	0.45 U	0.5 U	0,464 U	0.479 U	0,412 U	0.4 U	0.444 U

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* - Altered PCB Aroclor.

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Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-2-47' DUP L0105640 I 06/20/01 ug/L WATER	ECJ-2-82' L0105640 1 06/20/01 ug/L WATER	ECJ-3-126' L0105640 1 06/21/01 ug/L WATER	ECJ-3-51' L0105697 1 06/21/01 ug/L WATER	ECJ-3-91' L0105697 1 06/21/01 ug/L WATER	ECJ-4-130' L0107373 l 08/09/01 ug/L WATER	ECJ-4-160' L0107373 I 08/09/01 ug/L WATER	ECJ-4-225' L0107373 1 08/09/01 ug/L WATER	ECJ-4-245' L0107373 I 08/09/01 ug/L WATER	ECJ-4-60° L0107373 1 08/09/01° ug/L WATER
Aroclor 1221		0.444 U	0.404 U	0.44 U	0.454 U	0.469 U	2:5 U	2.5 U	2.5 U	2.5 U	2.5 U
Aroclor 1232		0.444 U	0.404 U	0.44 U	0.454 U	0.469 U	2.5 U	2.5 U	2.5 U	2.5 U	Mark Administration of the contract of the con
Aroclor 1242/1016		0.444 U	0.404 U	0.44 U	0.454 U	0.469 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U 2.5 U
Aroclor 1248		0.444 U	0.404 U	0.44 U	0.454 U	0.469 U	2.5 U	2.5 U	2.5 U		
Aroclor 1254		0.444 U	0.404 U	0.44 U	0.454 U	0.469 ป	2.5 U	2.5 U		2.5 U	2.5 U
Arocior 1260		0.444 U	0 404 U	0.44 U	0,454 U	0.469.U	2.5 U	2.5 U	2.5 U 2.5 U	2.5 U 2.5 U	2.5 U 2.5 U

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* - Altered PCB Aroclor.

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Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-4-85' L0107373 I 08/09/01 ug/L WATER	EQUIPMENT BI L0105697 I 06/22/01 ug/L WATER	ANK GCA-1 L0105431 I 06/14/01 ug/L WATER	MW-12AR L0105431 1 06/14/01 ug/L WATER	MW-14 L0105431 I 06/14/01 ug/L WATER	MW-15 L0105431 1 06/13/01 ug/L WATER	MW-16 L0105431 I 06/13/01 ug/L WATER	MW-2 L0105431 I 06/14/01 ug/L WATER	MW-24 L0105431 I 06/13/01 ug/L WATER	MW-8 L0107373 I 08/09/01 ug/L WATER
Aroclor 1221		2.5 U	0.494 ป	0.426 U	0.426 U	0.43 U	0.417 U	0.408 U	0.426 U	0.435 U	2.5 U
Aroclor 1232		2.5 U	0 494 U	0.426 U	0.426 U	0.43 U	0.417 U	0.408 U	0.426 U	0.435 U	2.5 U
Aroclor 1242/1016	e didential action and many many many and	2.5 U	0.494 U	0.426 U	0.426 U	0.43 U	0.417 U	0,408 U	5.9	0.435 U	×*1,436 076, 7 614466,√36 2.5 U
Aroclor 1248		2.5 U	0.494 U	0,426 U	0.426 U	0.43 U	0.417 U	0.408 U	0.426 U	0,435 U	2.5 U
Aroclor 1254	8.155-755/1 www.dansoo.laacansag	2.5 U	0.494 U	0.426 U	0.426 U	0.43 U	0.417 U	0.408 U	0.426 U	0.435 U	2,5 U
Aroclor 1260		2.5 U	0 494 Ú	0.426 U	0.426 U	0.43 Ü	0.417 U	0,408 U	0.426 U	0.435 U	2.5 Ü

NOTES:

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Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

* - Altered PCB Aroclor.

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	Sample ID SDG ID Dilution Factor	MW-8 DUP L0107373 I	MW-8A L0107373 I			,							 ;		
	Sample Date	08/09/01	08/09/01												
Compound	Units Matrix	ug/L WATER	ug/L												
Aroclor 1221	Matrix	2.5 U	WATER	·						_					
Aroclor 1232		2.5 U 2.5 U	2.5 U 2.5 U	POSSESSESS ASSESSESSES	194500019400 dog tagt 1000 1000	66 NAN 156005000 10		Note the second section is a	The date to proper sectors	ACCIONAL E PROFESSOR A					
Aroclor 1242/1016		2.5 U	2.5 U												
Aroclor 1248		2.5 Ü	2:5:U										40,859,158275	sija nineerijan	nauko de na
Aroclor 1254 Aroclor 1260		2.5 U 2.5 U	2.5 U 2.5 U	e di Propie de der besterut	Modernos acquires and publisher an	464 - 651 x 5050 5			ASTREE WILKSON 1990 K.S.		1929-1-198 J. J.N. 1970 	\$4,000,000 A \$400 (\$40	· 열심시 45 - 승규는	uta aya a kim	1715/12/17
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* - Altered PCB Aroclor.

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·	Sample ID SDG ID Dilution Factor Sample Date Units	ECJ-1-122' L0105697 I 06/21/01	ECJ-1-148° L0105697 1 06/21/01	ECJ-1-267' L0105697 1 06/21/01	ECJ-1-37 DUP L0105697 1 06/22/01	ECJ-1-37' L0105697 1 06/22/01	ECJ-1-62' L0105697 1 06/22/01	ECJ-1-72' L0105697 1 06/22/01	ECJ-2-117' L0105640 I 06/20/01	ECJ-2-152' L0105640 I 06/20/01	ECJ-2-187' L0106196 1 06/19/01
Compound	Matrix	mg/L WATER	mg/L WATER	mg/L WATER	mg/L. WATER	mg/L WATER	mg/L WATER	mg/L WATER	mg/L WATER	mg/L WATER	mg/L WATER
Aluminum		0.2	0.1 U	0.1 U	0.1 U	0.1	0.1 U	0.13	0.1 U	0.15	
Antimony		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U		0.27
Arsenic		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.05 U	0.05 U
Barium		1.5	0:12	0.03	0.47	0.44	0.3	0.29	0.007 0	0.005 U	0.005 U
Beryllium		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.24	0.02
Cadmium		0.005 U	0.005 U	0.00S U	0.005 ป	0.005 U	0.005 U	0.005 U	MANY SUMMERS CONTRACTOR OF THE	0.005 U	0.005 U
Calcium		150	84	22	54	51	62	64	0.005 U	0.005 U	0.005 U
Chromium		0.01 U	001 U	0.01 U	0.01 U	0.01 U	0.01 T	0.01 U	94 0.01 U	170	39
Cobalt		0.02 U	0.02 U	0.02 U	0.02 U	'0.02 U	0.02 U	0.02 U	919 199 LODGE AVENTAGE	0.01 U	0.01
Copper		0.01 U	0.01 U	0.01 U	0.03	0.01 U	0.01 U	0.02 U	0.02 U	0.02 U	0.02 U
[ron		89	4	0.1	63	59	28	28	0.01 U	0.01 U	0.07
Lead		0 005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	28 0.005 U	1.9	7 Subportosou en en entrimo o sur suc	2.3
Magnesium		34	16	3.2	14	13	16	in harin nu bun busi nitoprorp po	0.005 Ú	0.005 U	0.006
Manganese		4.9	1.5	0.2	7.8	7.4	56	15 35: 133: 35: 15: 15: 15: 15: 15: 15: 15: 15: 15: 1	13 60 au 200 de plus la papiesta con como la	16	4.6
Mercury		0.0005 ป	0.0005 U	0.0005 ป	0.0005 U	0.0005 ป	radadena senan ka-podudadeadea	6.4	0.59	2.5	0.53
Nickel		0.025 U	0.025 U	0.025 U	0.005 U	0.0003 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Potassium	2000000 10 10 00 00 00 00 00 00 00 00 00	12	2	I U	8.3	7,9	0.025 U	0.025 U	0.025 U	0.025 U	0.025
Selenium		0.005 U	0.005 U	0.005 U	0.005 U		5,9 6600000 1 21 V 2 0 0 0 0 0 0 0	4.9	2,4	5.7	3
Silver		0.007 U	0.007 U	0.007 U	0.003 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Sodium		73	28	14	70	0.007 ป	0.007 ป	0.007 U	0.007 ป	0.007 ป	0.007 U
Thallium	nananan muus vaansaa aa aa aa aa aa aa aa aa aa aa aa aa	0.005 U	0.005 U	0.005 U	0.005 U	66	58	50	48	56	24
Vanadium		0.01 U	0.003 U	MANAGER CONTRACTOR CONTRACTOR	MINNS TO THE WORLD WILL THE CONTRACTOR	0.005 U	0.005 U	0.005 U	0.005 U	0.005 ป	0.005 U
Zinc		0.05 U	0.05 U	0.01 U	0.01 U	0.01 U	0.01 D	0.01 U	0.01 Ü	0.01 U	0.01 U
			0.00 36.3666666666666. 200 00000.	0.05 U	0.05 ป	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	7.7

U - not detected, J - estimated value, R - unusable, — - not analyzed.

Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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DBF File: N:\5509\28602\TEMPDATA.DBF
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Compound	Sample ID SDG ID Dilution Factor Sample Date Units Matrix	ECJ-2-47' L0105640 i 06/20/01 mg/L WATER	ECJ-2-47' DUP L0105640 1 06/20/01 mg/L WATER	ECJ-2-82' L0105640 l 06/20/01 mg/L WATER	ECJ-3-126' L0105640 l 06/21/01 mg/L WATER	ECJ-3-51' L0105697 1 06/21/01 mg/L WATER	ECJ-3-91' L0105697 I 06/21/01 mg/L WATER	ECJ-4-130' L0107373 I 08/09/01 mg/L WATER	ECJ-4-160' L0107373 I 08/09/01 mg/L WATER	ECJ-4-225' L0107373 1 08/09/01 mg/L WATER	ECJ-4-245' L0107373 1 08/09/01 mg/L WATER
Aluminum		0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Antimony		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.10 0.05 U
Arsenic		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Barium		0.04	0.04	0.01	0.03	0.09	0.03	0.01 U	0.0050	0.003.0	0.003 U
Beryllium		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Cadmium		0.005 U	0.005 ป	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Calcium		100	100	83	38	37	36	140	55	48	40
Chromium		0.01 U	001 U	0.01 U	0.01	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Cobalt	200000 C. 20. 30100 C	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Copper		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Iron 20. agrana 20. an anna ann an anna ann ann an	ate 5000 to a tel from the matters incomes.	5.5	5.6	1.1	0.15	8.3	0.08	0.28	0.48	0.31	0.14
Lead		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium	500000000000 Westernoonsoner	31	32	13	17	11	16	40	11	1 444141441177777777448, 234.1 4.2	4.3
Manganese		5.4	5.6	0.34	0.03	0.9	0.02	0.17	0.1	0.12	0.08
Mercury	specification of the state of the second contraction of	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 ป	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 ป
Nickel		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 Ú
Potassium	sees on two corns could add add to	7.3	7	2.5	6.4	7.3	6.1	3.2	1.8	I U	1 U
Selenium		0.00S U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Silver	0000v3 x3100 b0v00v20c b 4000 b0000v	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U
Sodium		47	48	43	130	150	120	41	33	24	23
Thallium	Straint that the last water transfer on the	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Vanadium 		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01.0	0.01 U	0.01 U
Zinc	eccentric control of the control of	0.05 U	0.05 U	0.05 U	0.05	0.05	0.05 U	0.05 Ŭ	0.05 U	0.05 U	0.05 U

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	Sample ID	ECJ-4-60'	ECJ-4-85'	EQUIPMENT BI	LANK GCA-1	MW-10	MW-10A	MW-10B	MW-12AR	MW-13	MW-13A
	SDG ID	L0107373	L0107373	L0105697	L0106286	L0106267	L0106196	L0106196	L0106286	L0106267	L0106196
	Dilution Factor	1	1	t i	1	1	1	1	1	1	1
	Sample Date	08/09/01	08/09/01	06/22/01 mg/L	06/14/01	06/15/01	06/19/01	06/19/01	06/14/01	06/15/01	06/18/01 mg/L
	Units	mg/L	mg/L		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
Compound Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	
Aluminum		0.I U	0.1 U	0.1 U	0.25	0.1 U	2.9	0.1 U	0.1 U	0.16	0.16
Antimony		0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 ป	0.05 U	0.05 U	0.05 U	0.05 U
Arsenic		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Barium		0.01 U	0.01 U	0.01 U	0.81	0.01	0.67	0.03	0.79	0.31	
Beryllium		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.3 2 0.005 U
Cadmium		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0,005 U	
Calcium		120	120	0.I U	80	79	52	79	80	42	0.005 U 43
Chromium		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	42 0.01 U	93 0.01 U
Cobalt	•	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Copper		0.01 U	0.01 U	0.01 U	0.01 U	0.01.U	0.01	0.01 U	0.01 U	0.02 U	
Iron		0.07	0.13	0.05 U	68	22	18	13	7I	53	0.01 U 50
Lead		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005	0.005 U	0.005 U	0.005 U	
Magnesium		46	43	0.I U	13	43	20	46	12	10	0.00 5 U 10
Manganesé		0.01 U	0.01	0.01 U	2.2	0.02	1.8	0.08	1.8	6.8	7.2
Mercury		0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0,0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Nickel		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.0003 U	0.003 U
Potassium		3,2	3.2	ΙÜ	9	3,5	4.1	3.6	8.7	7.5	7.4
Selenium		0.00S U	0,005 U	0.005 U	0.005 U	0.005 U	0,005 U	0.005 U	0.005 U	์ 0.005 ป	0.005 Ú
Silver		0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	9799 (NAMEL II. 1970 L. T. 1970 (1970)
Sodium		47	46	ΙÜ	100	24	19	31	120	68	0.007 Ư
Thallium		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	67
Vanadium		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01	0.01 U	0.003 ()	anne anne e e e e e e e e e e e e e e e	0.005 U
Zinc		0.08	0.05 U	0.05 U	0.27	0.05 U	0.05 U	0.05 U	0.01 0.05 U	0.01 0.05 U	0.01 U 0.05 U

NOTES:

U - not detected, J - estimated value, R - unusable, --- - not analyzed.

Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

Date Printed: 10/31/01 09:28:18
DBF File: N:\\5509\28602\TEMPDATA.DBF
FXP File: N:\\5509\28602\TABLEPR.FXP



	Sample ID SDG ID	MW-14 L0105431	MW-15 L0105431	MW-16 L0105431	MW-17 L0106196	MW-2 L0106286	MW-22A L0106196	MW-24 L0106286	MW-4 L0106196	MW-4A L0106196	MW-5 L0106267
	Dilution Factor Sample Date	06/14/01	1 06/13/01	1 06/13/01	l 06/18/01	I 06/14/01	1 06/18/01	1 06/13/01	1 06/18/01	1 06/18/01	1 06/15/01
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
Aluminum		0.1 U	0.1 U	0.1 U	0.1 U	0.17	0.3	0.1 U	0.1 U	0.24	0.1 U
Antimony		0.05 U 0.05 U	0.05 U	0.05 U	0.05 U	0.05 U					
Arsenic		0.005 U 0.023	0.005 U	0.005 U	0.005 U	0.005 U					
Barium		0.12	0.1	0.1	0.04	0.11	0.09	0.3	013	0.05	0.08
Beryllium	# NACO 104	0.005 U	0.005 U	0.005 U	0,005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Cadmium		0.005 U	0.005 U	0.005 U	0.005 ป	0,005 U	0,005 U	0.005 U	0.005 ป	0.005 U	0.005 U
Calcium		85	72	39	44	84	120	49	46	24	120
Chromium		0.01 U 0.01 U	0.01 U	0.01 U	0.01 U	0.01.0					
Cobalt		0.02 U 0.15	0.02 U	0.02 U	0.02 U	0.02 U					
Соррет		001U	0.01 U	0.01 U	0 01 U	0.01 U	0.03	0.01 U	0.01 U	0.01 U	0.01 U
Iron	MAN 25 2 12 2 12 2 12 2 12 2 12 2 12 2 12	23	47	1.9	0.3	64	110	37	7.3	26	0.05 U
Lead		0.005 U	0,005 U	0.005 U	0.005 U	0.005 U	0.104	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium		21	10	8.4	6.8	23	21	13	9,1	4	24
Manganese		3,5	1,9	1.5	1.5	5.2	4.3	3.3	1.7	17	0.04
Mercury		0.0005 U 0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U					
Nickel		0.025 U	0.025 U	0.025 U	0.025 U	0. 025 U	0.961	0.025 U	0.025 U	0.025 U	0.025 U
Potassium		12	13	6.6	5.1	10	11	7.5	d. 1000-00-4 d. 6. F. 6. (1760-060), (194- 1, 6	1,9	6.5
Selenium		0.005 U 0.005 U	0.005 U	0.005 U	0.005 U	0.005 U					
Silver	Charles Salari and Control Salari Salari Salari Salari Salari Salari Salari Salari Salari Salari Salari Salari	0.01 U	0.01 U	0.01 U	0.007 U	0.007 ປ	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U
Sodium		88	100	170	29	86	100	96	31	120	110
Thallium	. 20/10/00/00/00 202	0.005 U 0.005 U	0.005 U	0.005 U	0.005 U	0.005 U					
Vanadium		0.01 U 0.07	0.01 U	0.01 U	0.01 U	0.0030					
Zinc		0.05 U	0.05 U	0.07	0.05 U	0.05	1.9	0.05 U	0.05 U	0.01 U	0.01 U

NOTES:

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Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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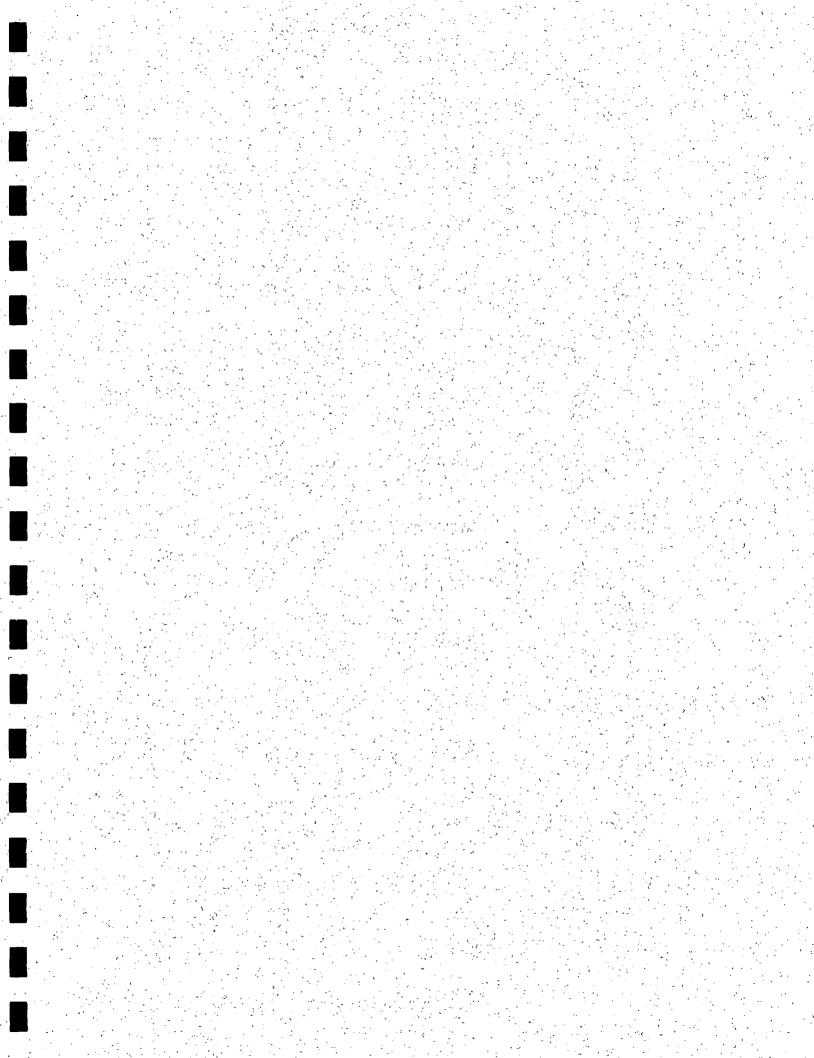
	Sample ID SDG ID Dilution Factor	MW-5A L0106267 1	MW-6 L0106196 1	MW-6 DUP L0106196	MW-6A L0106196	MW-6A DUP L0106196	MW-8 L0107373	MW-8 DUP L0107373	MW-8A L0107373
	Sample Date	06/15/01	06/19/01	06/19/01	06/19/01	06/19/01	08/09/01	08/09/01	08/09/01
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
Compound	Matrix	WATER	WATER	WATER	WATER	WATER	WATER	mg/L WATER	mg/L WATER
Aluminum		0.1 U	0.13	0.13	0.13	0.14	0.1 U	0,1 U	10
Antimosy		0.05 U	0.05·U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Arsenic		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Barium		0.13	0.03	0.03	0.08	0.08	0.01	0.01	0.08
Beryllium	***************************************	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Cadmium		0.005 U	0.005 U	0.005 U	0,005 U	0.005 U	0.005 U	0.005 U	0.003 U
Calcium	- to prove a large of the second of the second	25	96	96	87	86	120	120	100
Chromium		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.06 J
Cobalt	4	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Соррег		0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.02 0
Iron	e energia e conservamento e e anti-supplicativo de	0.05 U	6.7	6.8	12	12	7.6	9.5	12
Lead		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Magnesium		5.3	30	30	26	26	47	48	54
Manganese		0.01 U	7.6	7.6	91	9	0.01 U	0.01 U	015
Mercury	***************************************	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U
Nickel		0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025.U
Potassium	***************************************	5.6	5	5	10	10	3.4	3.4	6.4
Selenium		0.005 ป	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Silver	and a second second second second second second second second second second second second second second second	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 U	0.007 ป
Sodium		220	65	66	110	110	46	See Service of the Contraction of	0.007 B
Thallium	The second consists and a state and a	0.005 U	0.005 U	0.005 U	0,005 U	0.005 U	0.005 U	46 0.005 U	
Vanadium		0.01 U	0.01 U	0.01 U	001 U	0.01 U	0.003 U	0.003 U	0.005 U Standin Kanara Guda Jaroba Kasana Alabasa Janda Jaroba Jaroba Jaroba Jaroba Jaroba Jaroba Jaroba Jaroba Jaroba
Zinc	er er er er er er er er er er er er er e	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.02

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Dup - references blind field duplicate sample that was collected. Lab Dup - laboratory duplicate analyses conducted.

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File Number: 5509.28602





December 27, 2001

Mr. David O. Lederer Remedial Project Manager Environmental Protection Agency (HBO) Region 1 1 Congress Street, Suite 1100 Boston, MA 02114-2023

Re: Sullivan's Ledge Superfund Site

Quarterly Ground Water

Sampling Event – Summer 2001

File: 5509/28602 #2

Dear Dave:

Please find enclosed for your review the Quarterly Ground Water Sampling Event – Summer 2001. Please contact me if you have any questions concerning this document.

Very truly yours,

O'BRIEN & OFRE ENGINEERS, INC

lames R. Heckathorne, PE

Vice President

 $I:\DIV71\Projects\5509\28602\2_corres\LEDER851.doc\ Attachment$

cc:

S. Wood

E. Vaughn

R. Carey

J. O'Loughlin

E. Bertaut

. ,

D. Dwight

M. Wade

G. Swenson

R. Connors